

# Canon A-1 CLA Guide

from the Learn Camera Repair Facebook Group posts by

Eugene Pate

<https://learncamerarepair.com/>

# Post #1

I've got an A1 in for repair that's been sitting since Ronald Regan was president - the original owner worked for the NISTB and was using the camera for accident investigation, the particular program he was working was defunded by President Regan and the camera has been sitting ever since...

During testing I found the mirror squeaking and sticking in the up position intermittently, the shutter curtains are erratic and slow indicating the lubrication has dried up, the exposure meter is spot-on, the auto aperture function was the only accurate exposure mode. Of course the seals and cushions are bad, the finder needs to be cleaned.

The awesome thing is the camera has never been on a workbench so I don't have to worry about sub-standard work (occasionally I have to repair another persons attempts at camera repair).

This camera isn't worn, no scratches or dents, the finish looks new - this is gonna be fun!



## Post #2

Remove the two screws holding the bottom cover and inspect the bottom - wow, it's like 1980's again!

You'll notice there are many similarities to the Canon AE-1 and some parts are interchangeable. This is an older A series camera using a metal battery cover (no worrying about the plastic door breaking).



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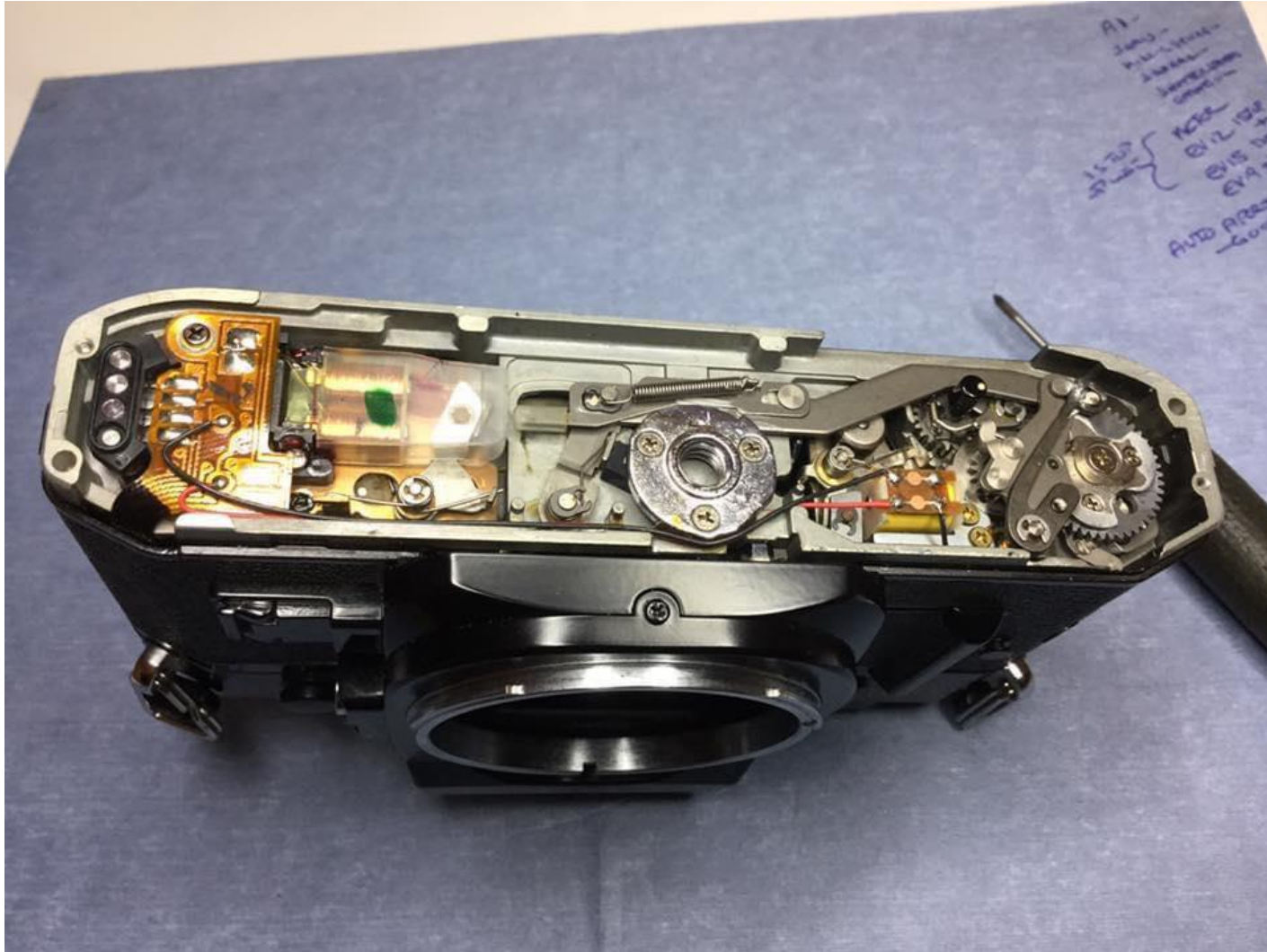
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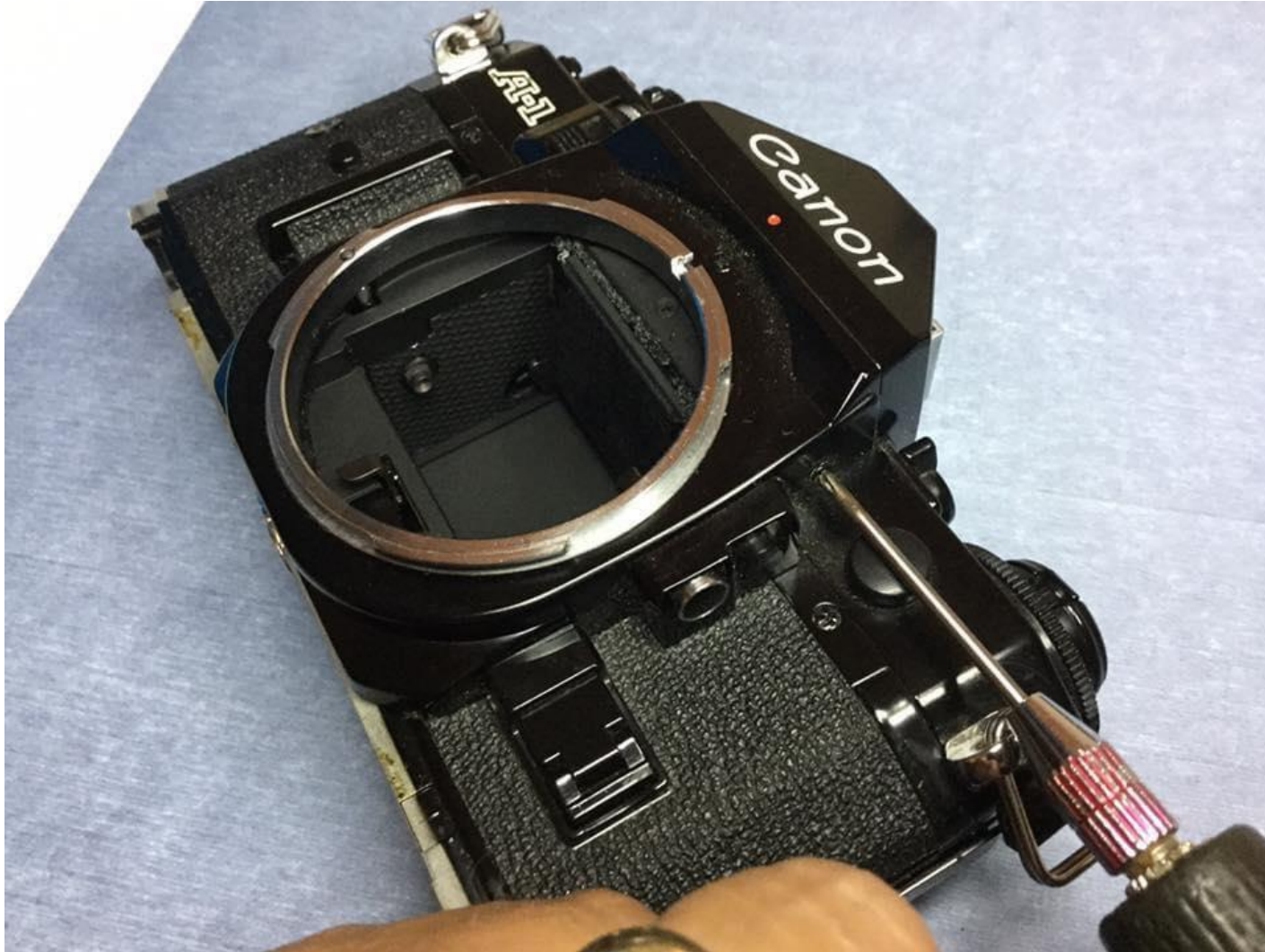
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# Post #4

Removing the top cover requires removing around 36 parts first depending upon the year made.

Settings for disassembly;

The display switch must be turned on (the white dot should be visible) - the switch is located on the rewind side top cover and it's function is to turn off the exposure display.

The only left-hand threads are the screws holding the pinions on top of the winding rollers, all other screws are the normal right-hand thread.

Push up on the guard that prevents the accidental turning of the AT dial (front of the cover wind side). There is a single screw holding plastic housing on, remove the screw and lift off the housing, the button, the detent ball will be loose at this point - remove it and set it aside, two screws hold the metal bracket, lift the remaining parts off.



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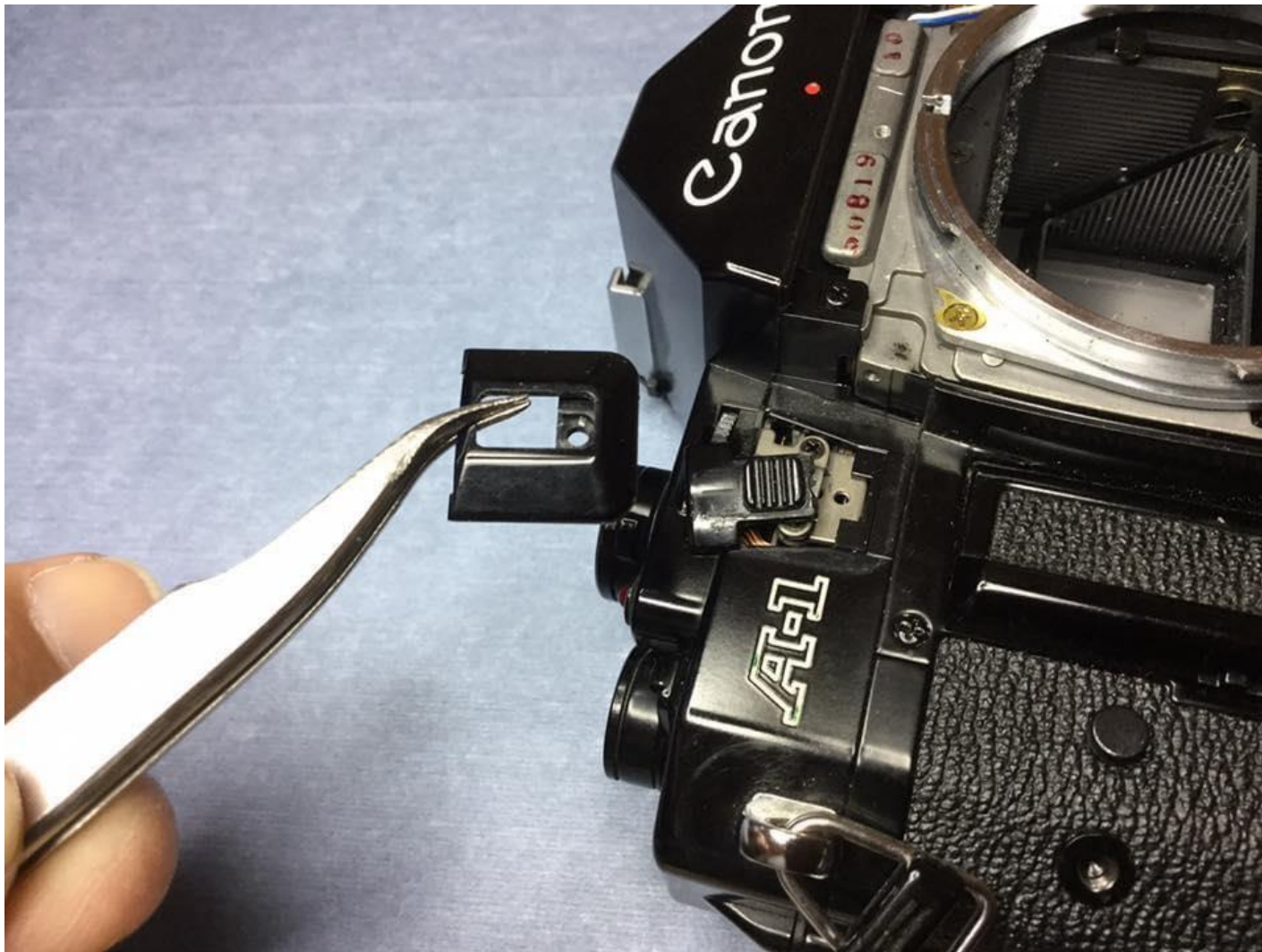
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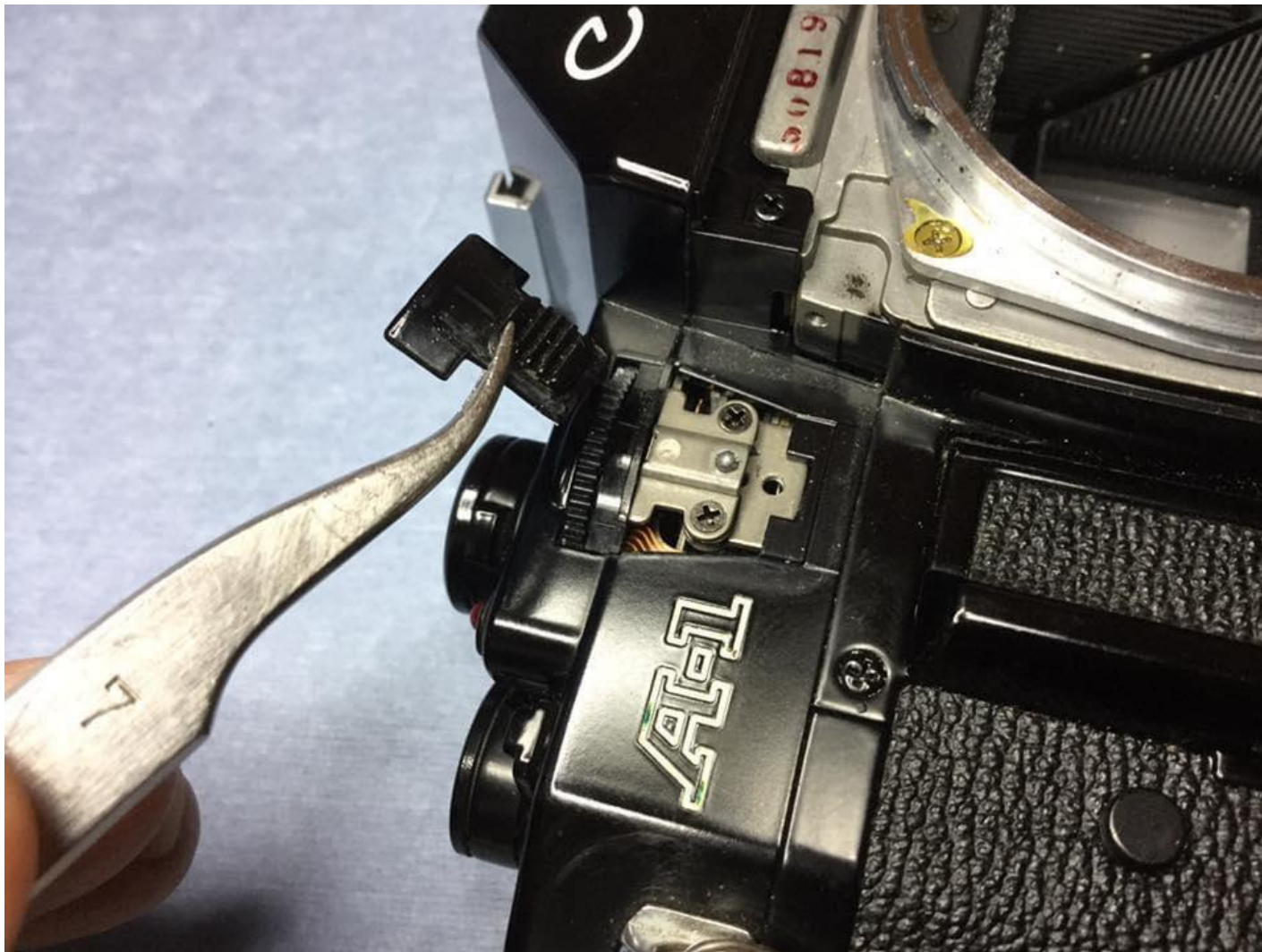
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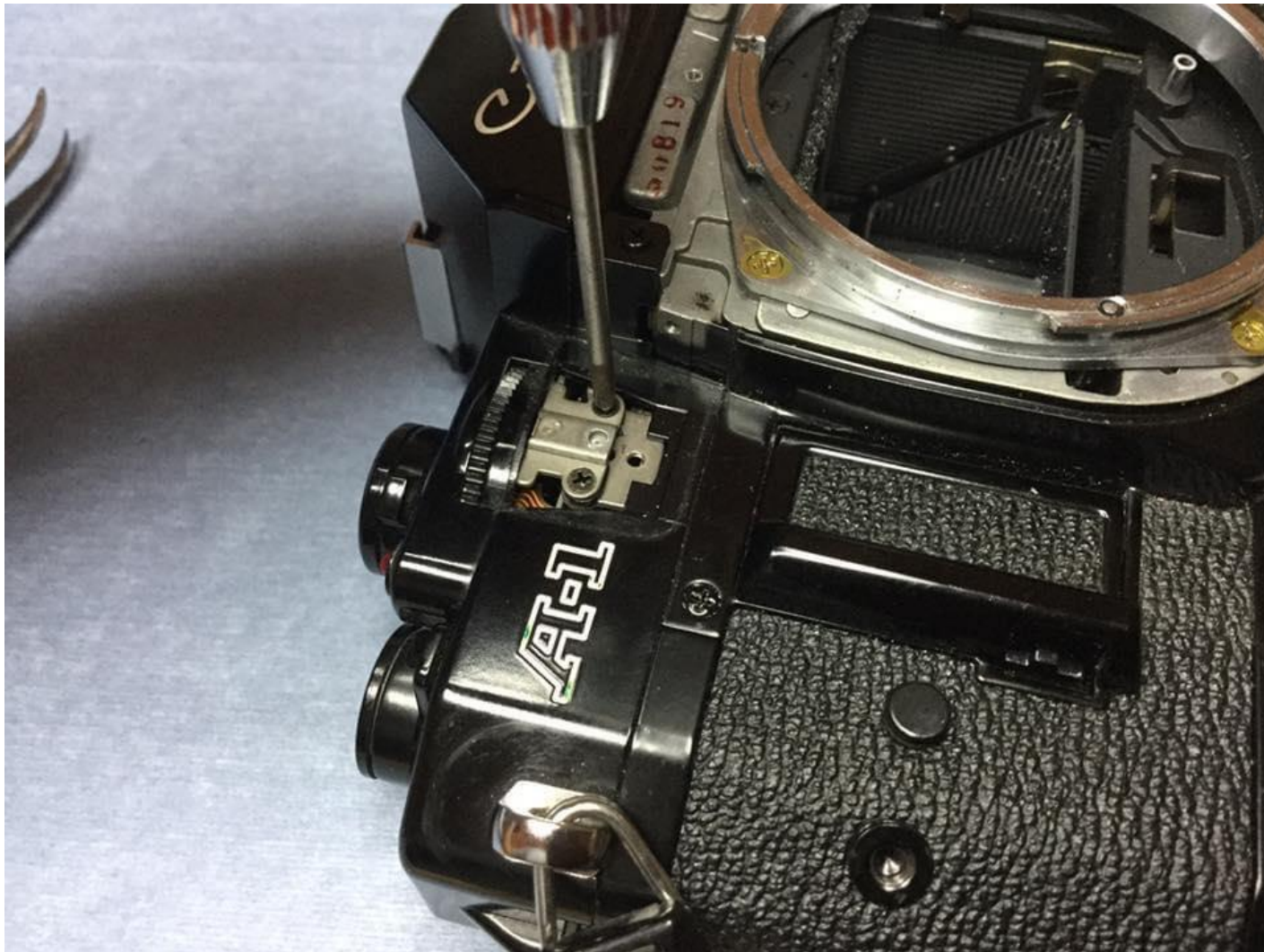
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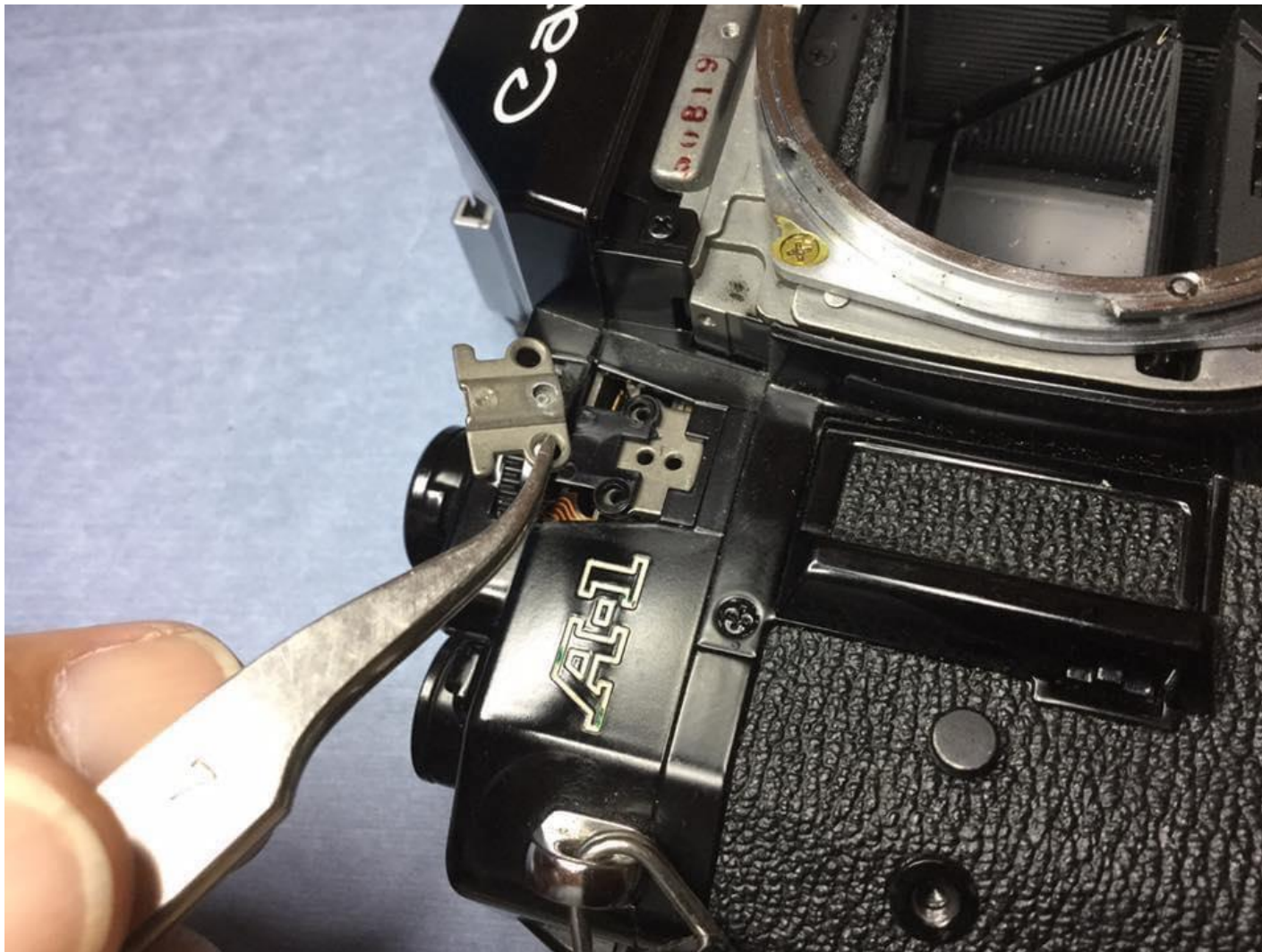
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Remove the winding lever cap-screw with the appropriate spanner, remove the washers underneath noting the order, lift off the lever, remove the wind cam. Remove the snap ring holding the mode and self-timer switches, note the loose parts and washers.



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Remove the release button collar (a rubber dam or a piece of rubber works well and doesn't mar the finish), unscrew the collar, lift off the mode switch parts and loose washers.

The metal release button may be loose, don't lose it.





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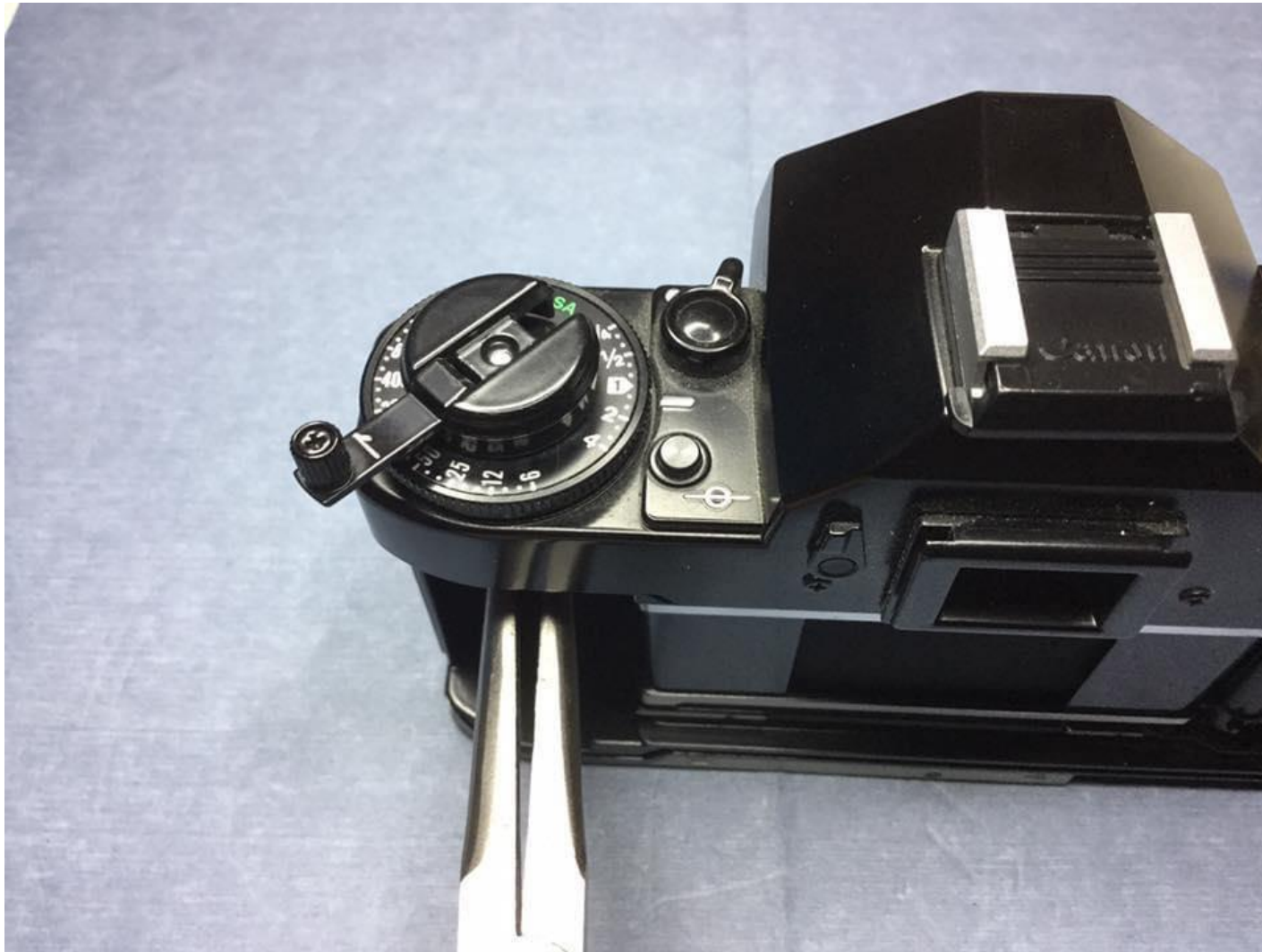




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If you haven't already, remove the film door by pressing down on the hinge pin and set the door aside, be careful not to touch the shutter curtains.

Hold the rewind shaft with a needle nose pliers and unscrew the rewind knob, remove the snap ring holding the ASA dial, lift the dial off and the loose washers.



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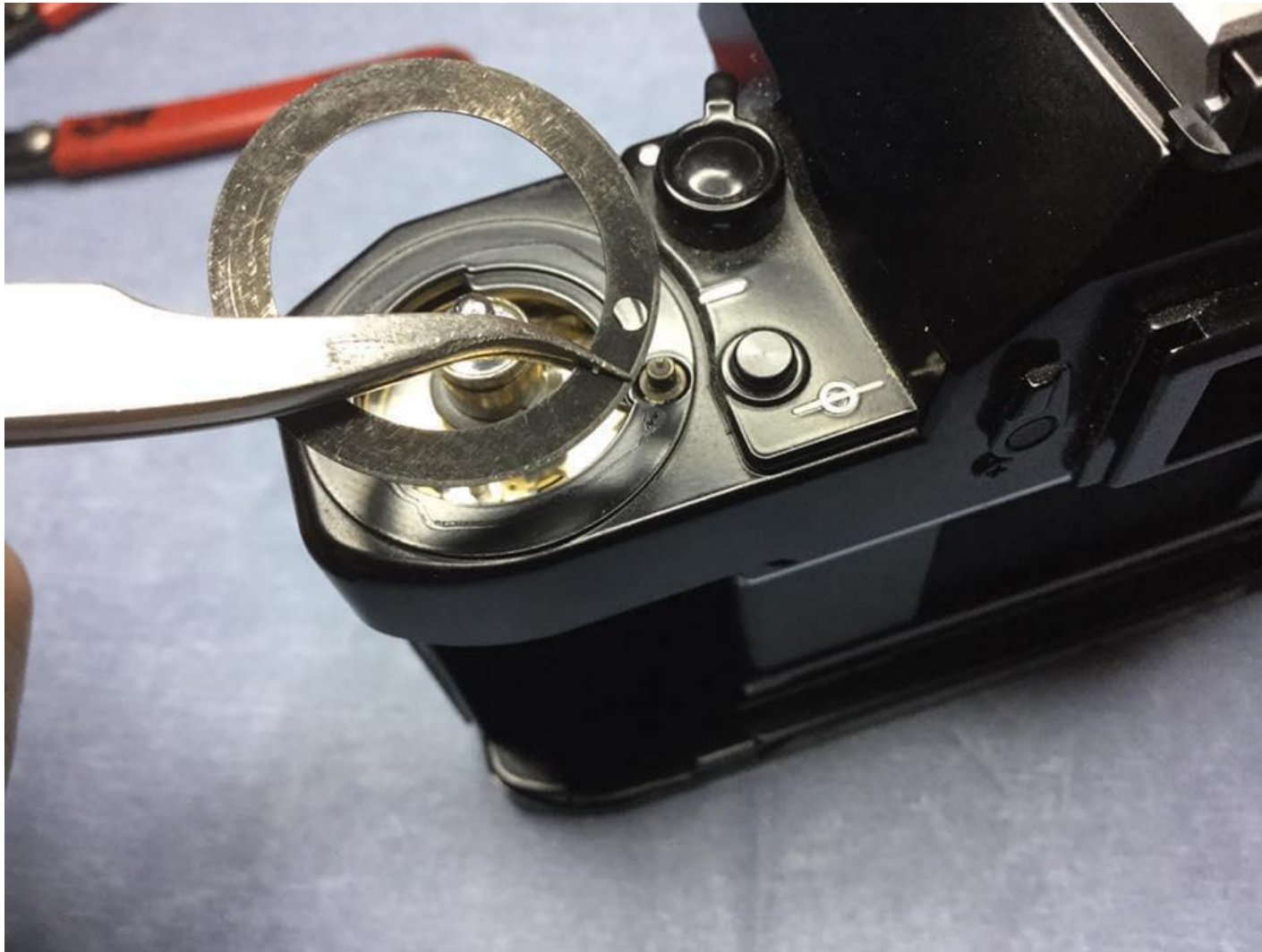




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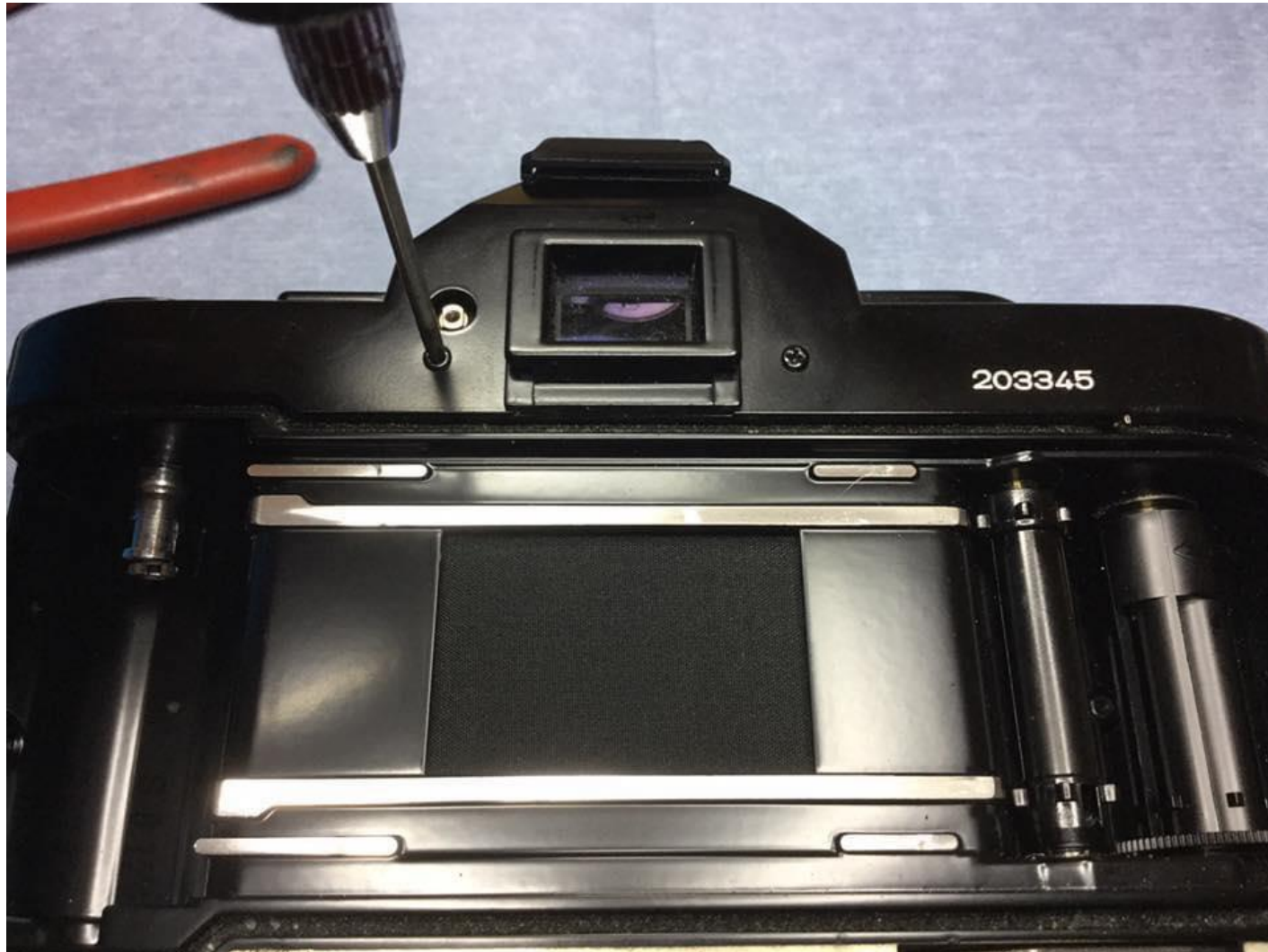


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No wires to unsolder on this one.

If you haven't already remove the battery, never unsolder wires with the battery installed.



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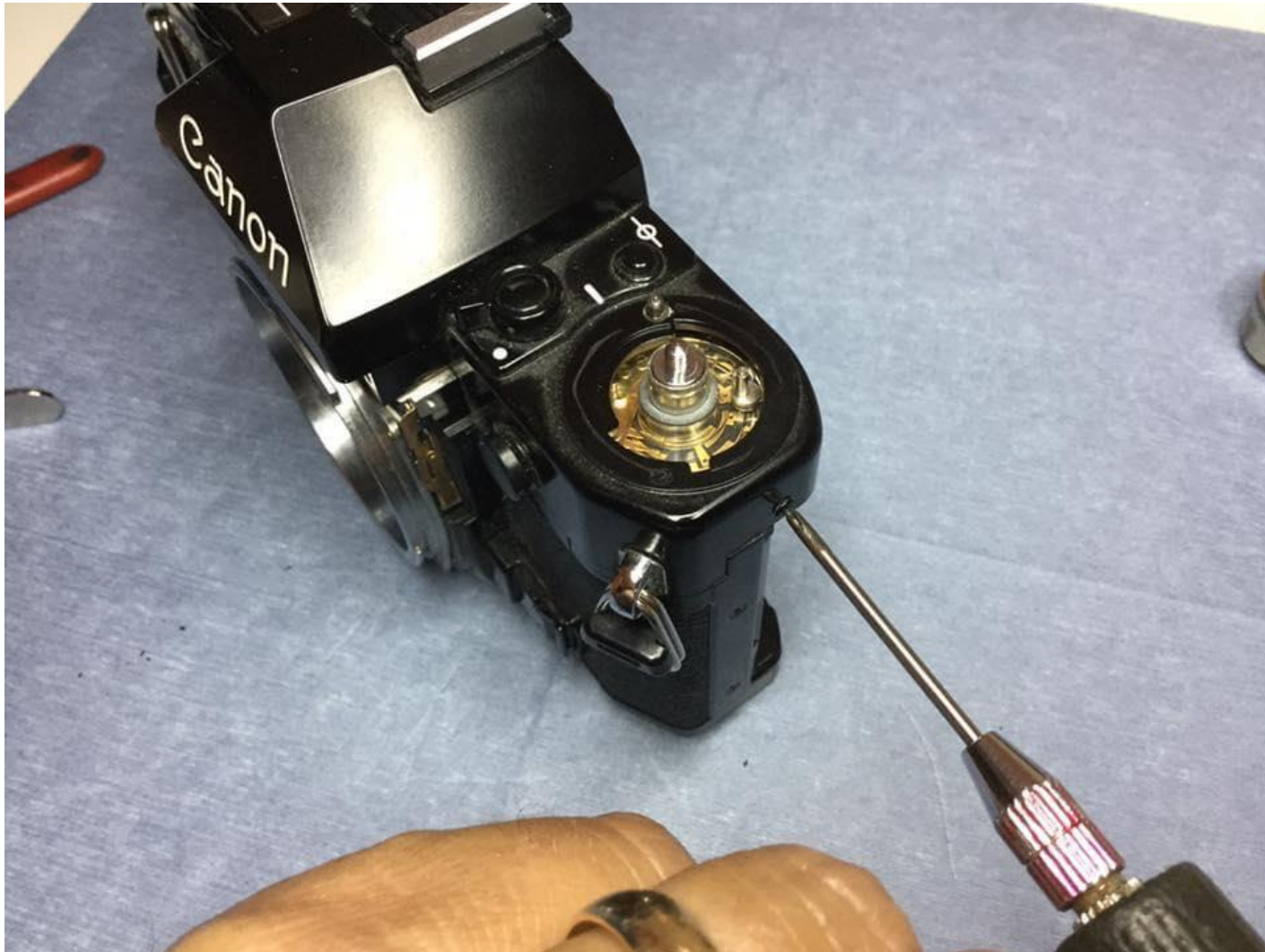


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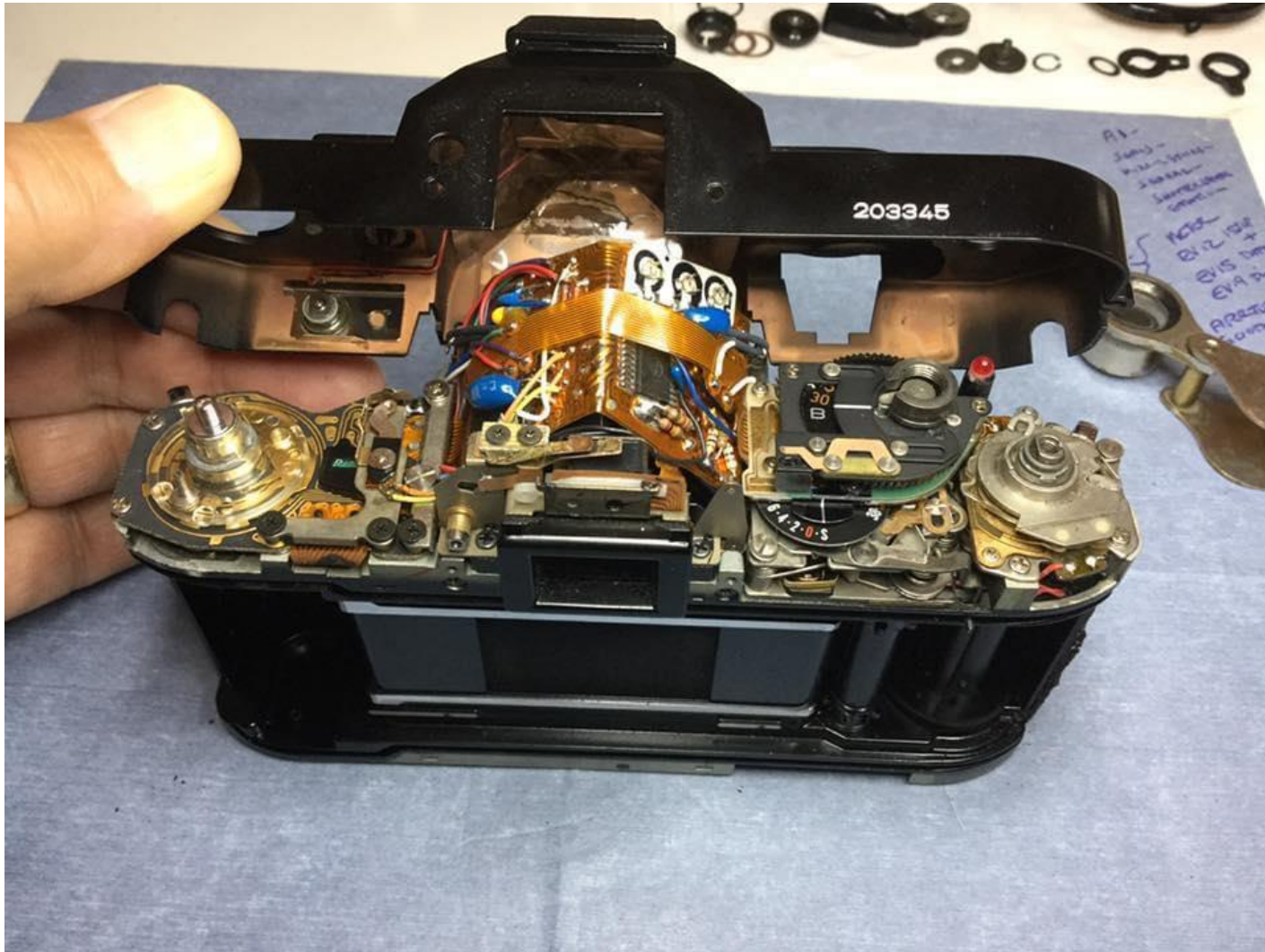


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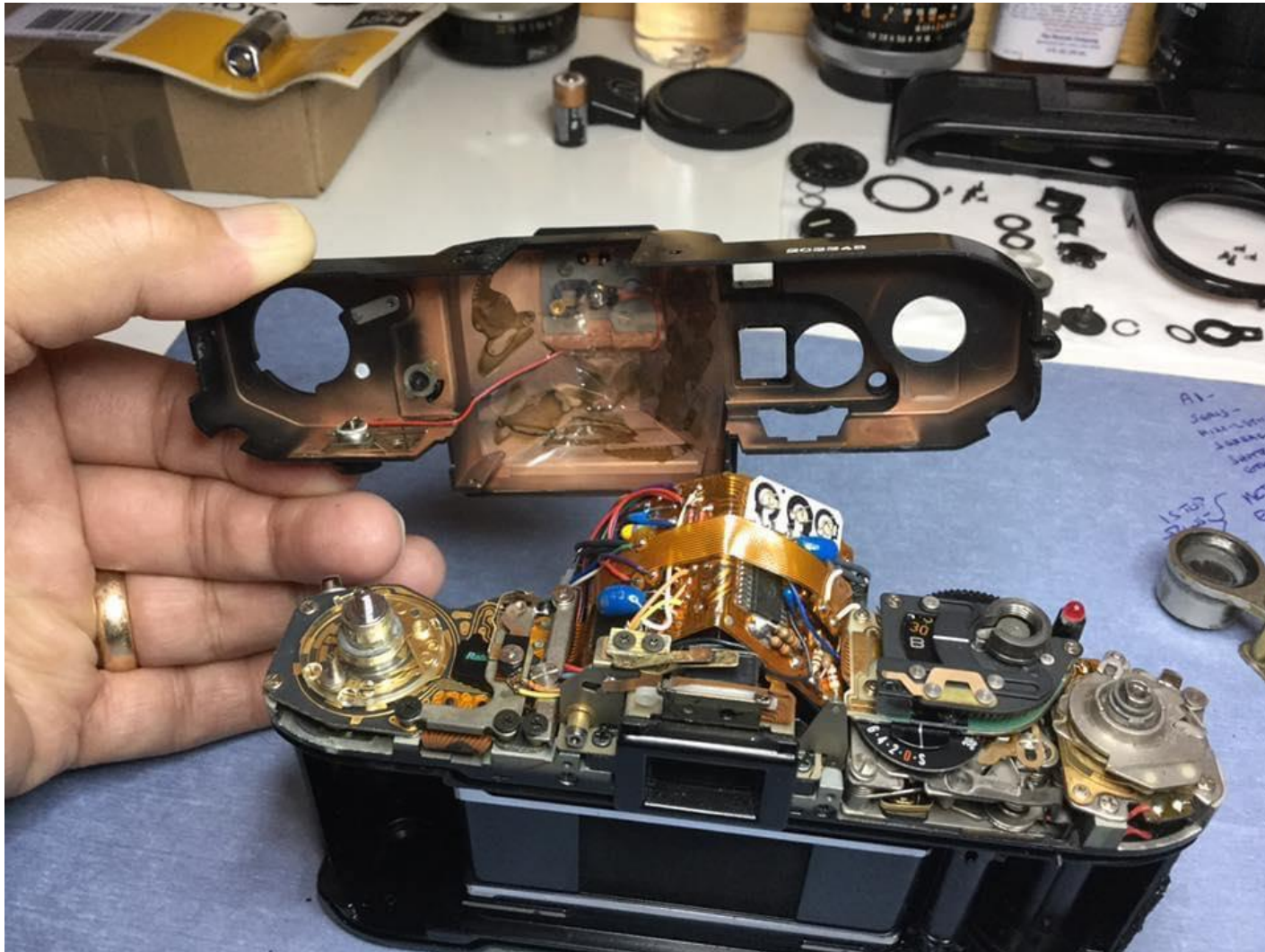


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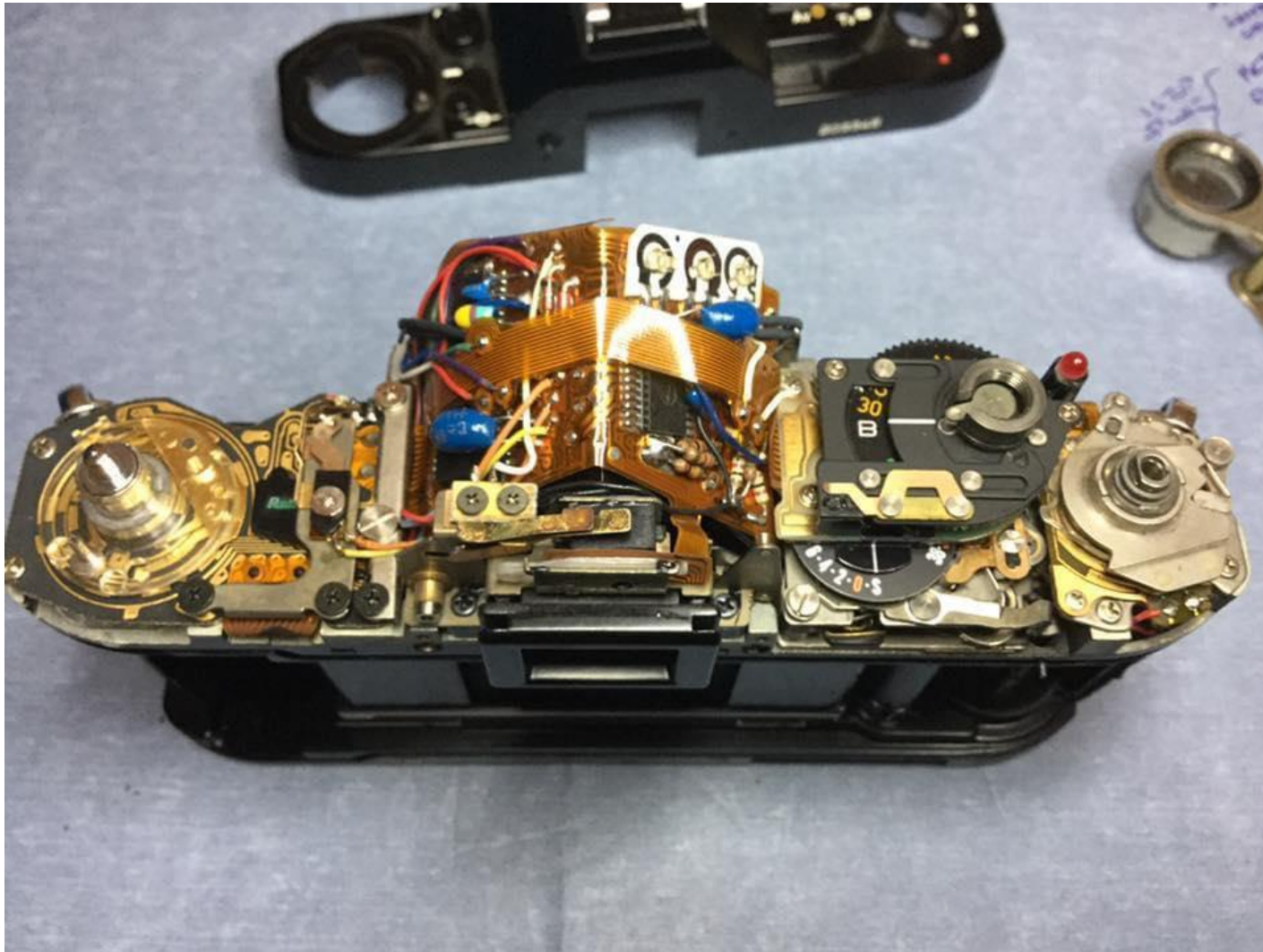
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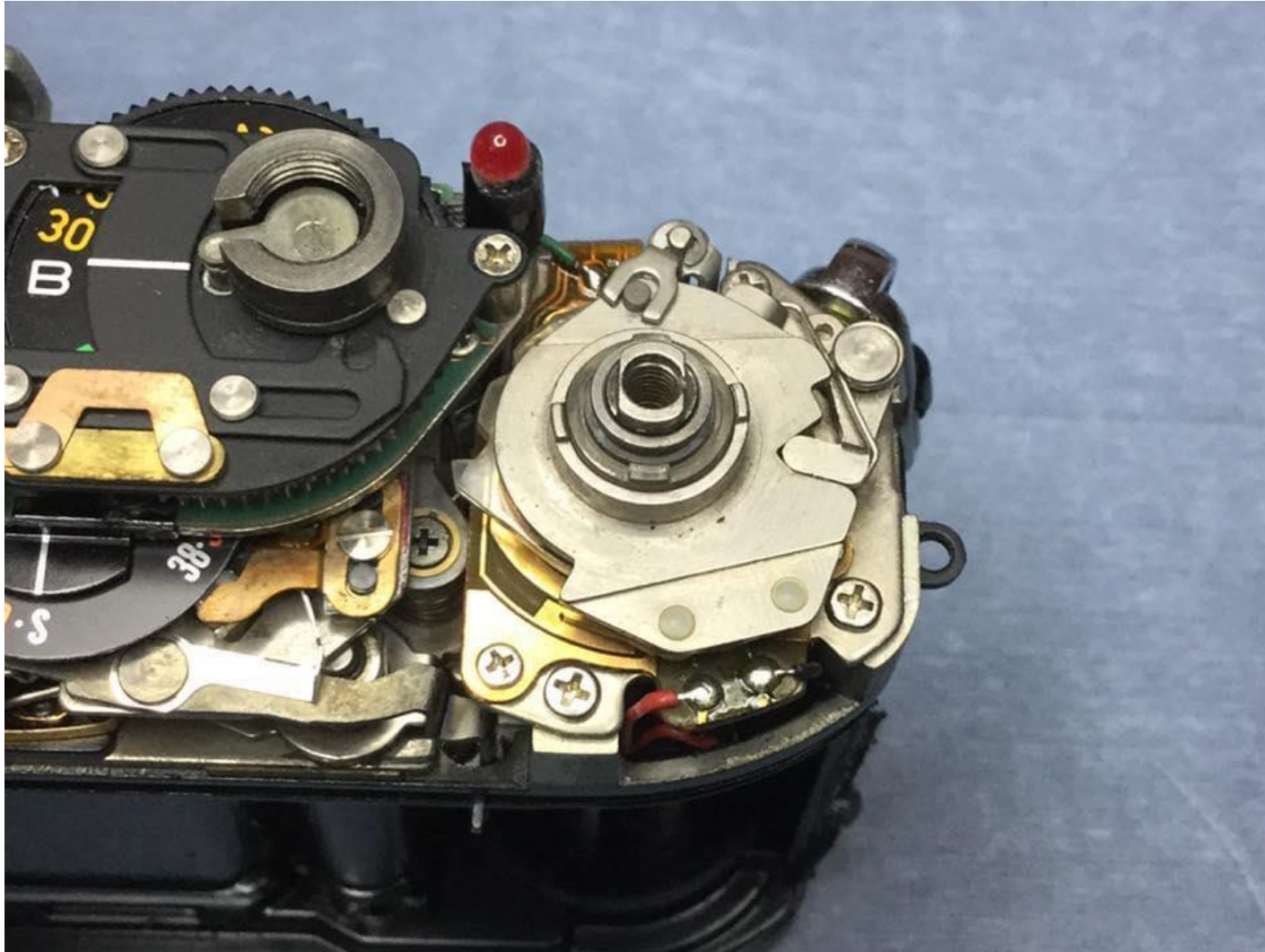
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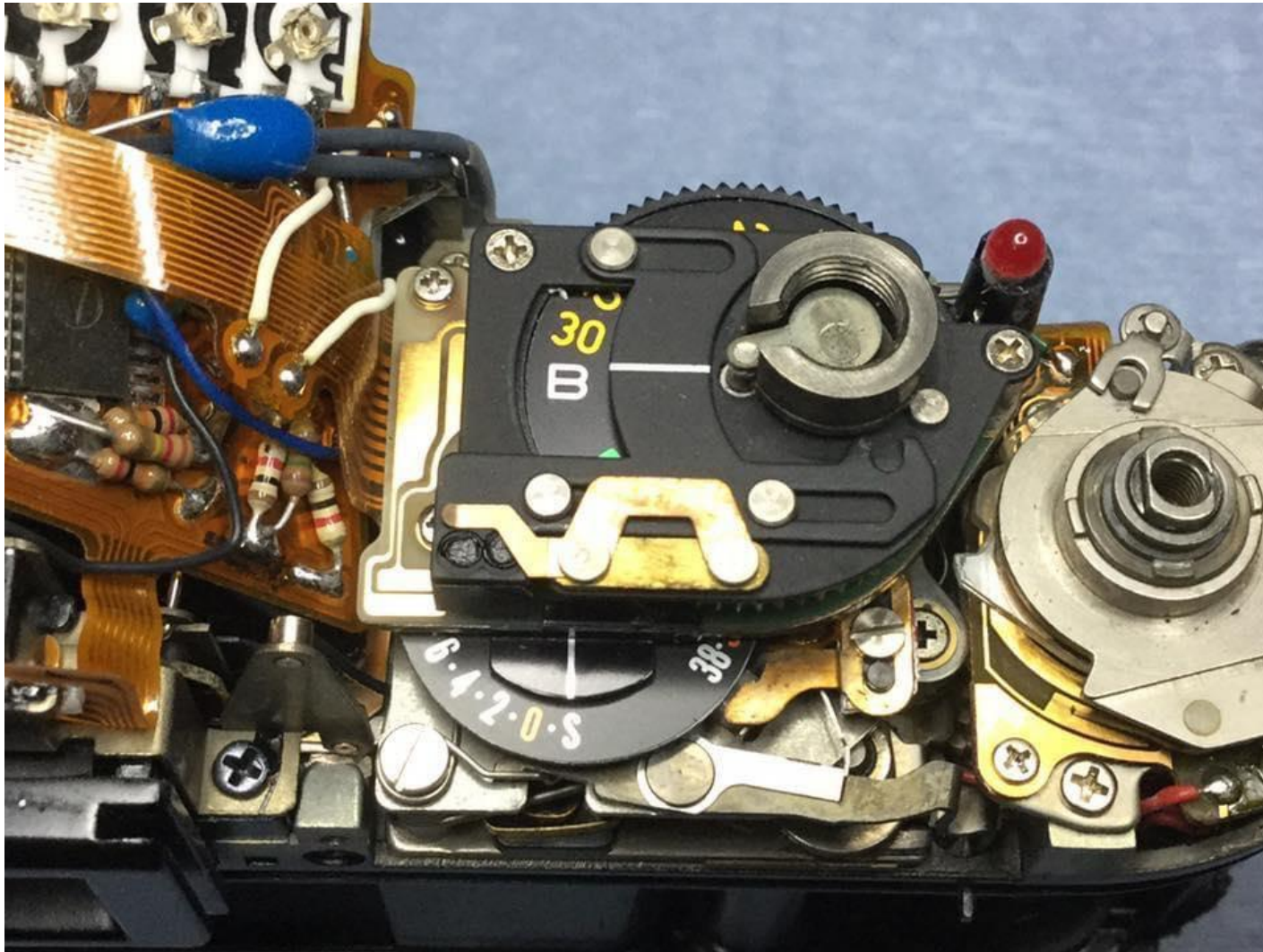
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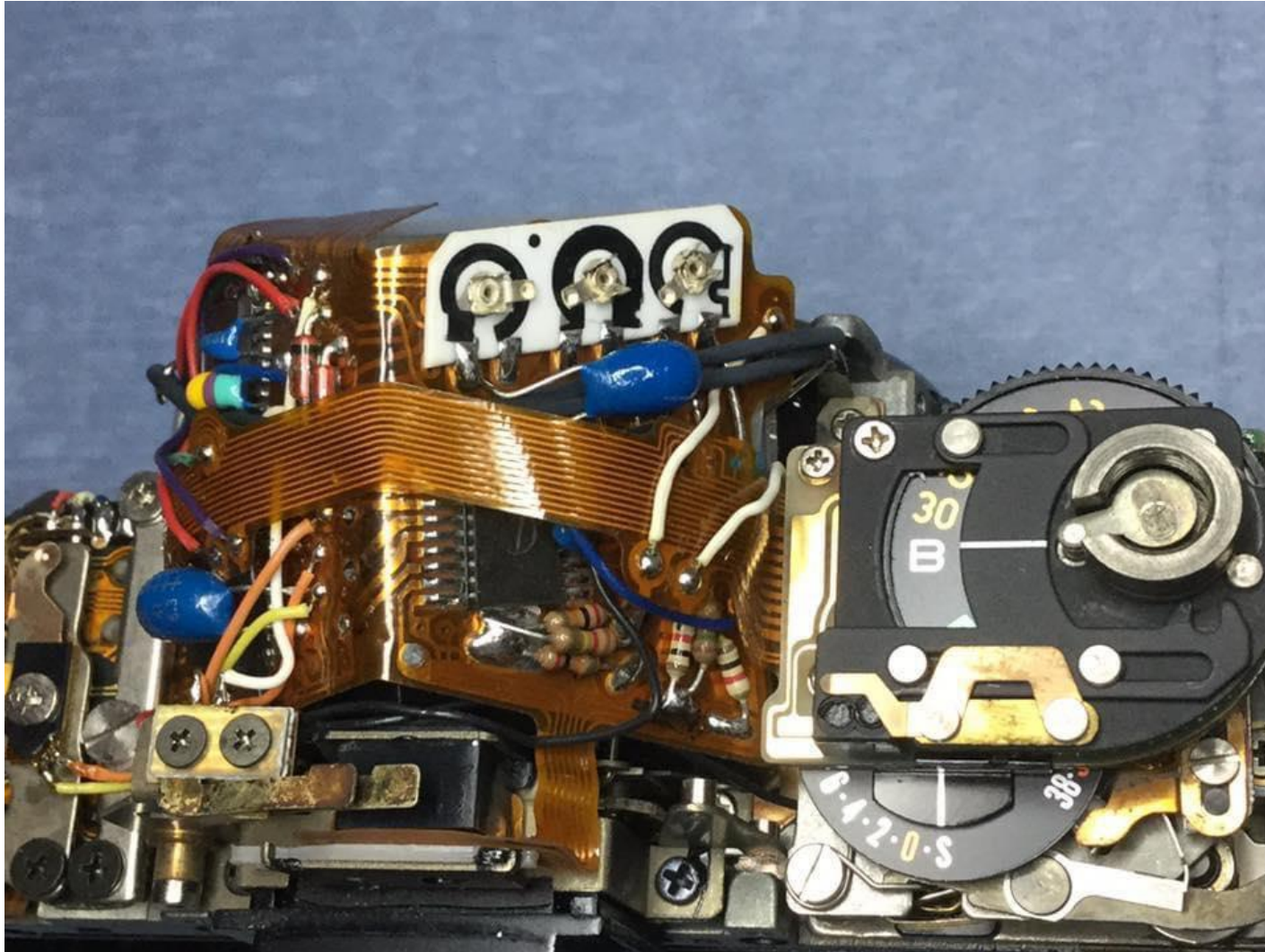
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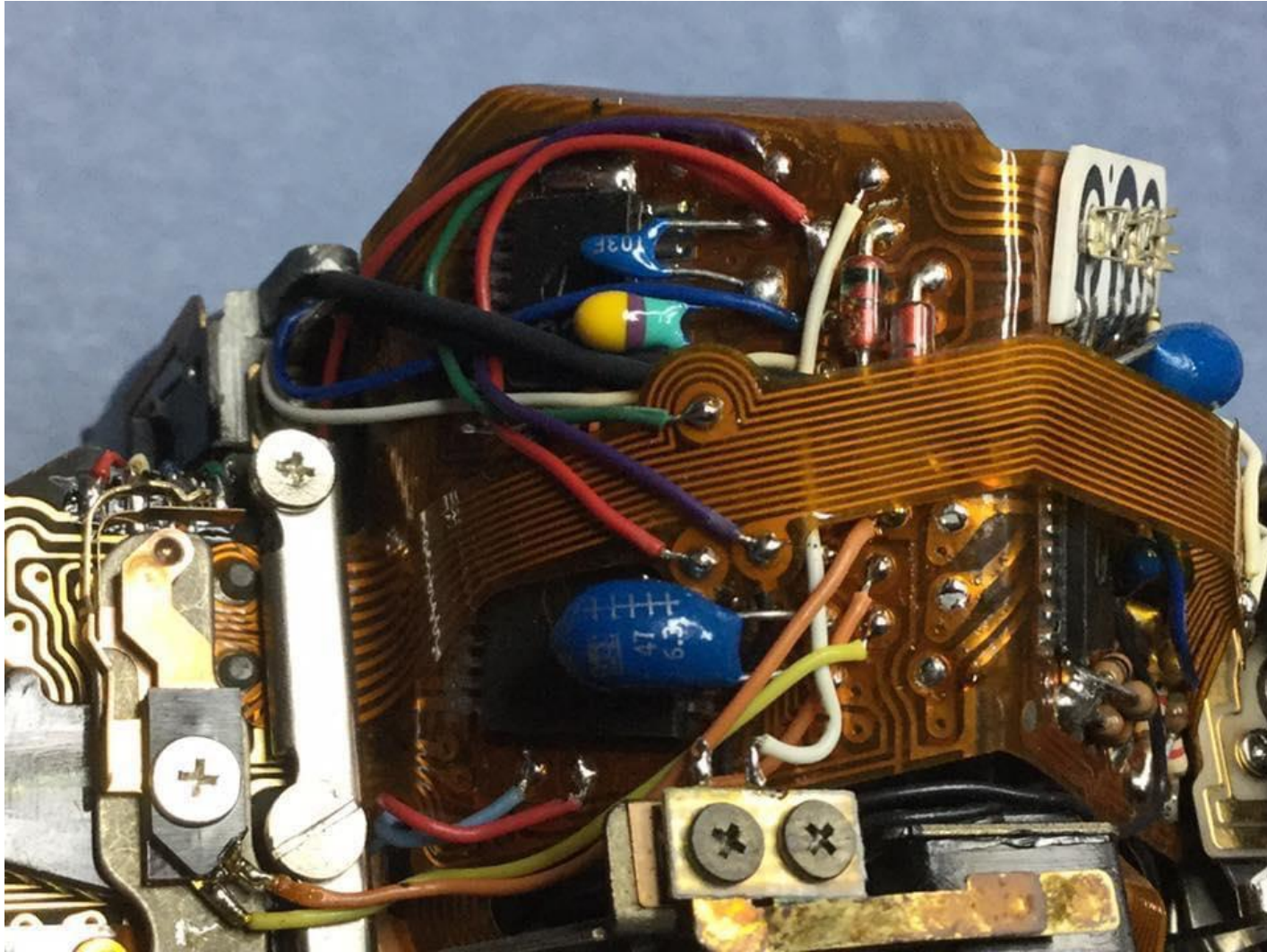
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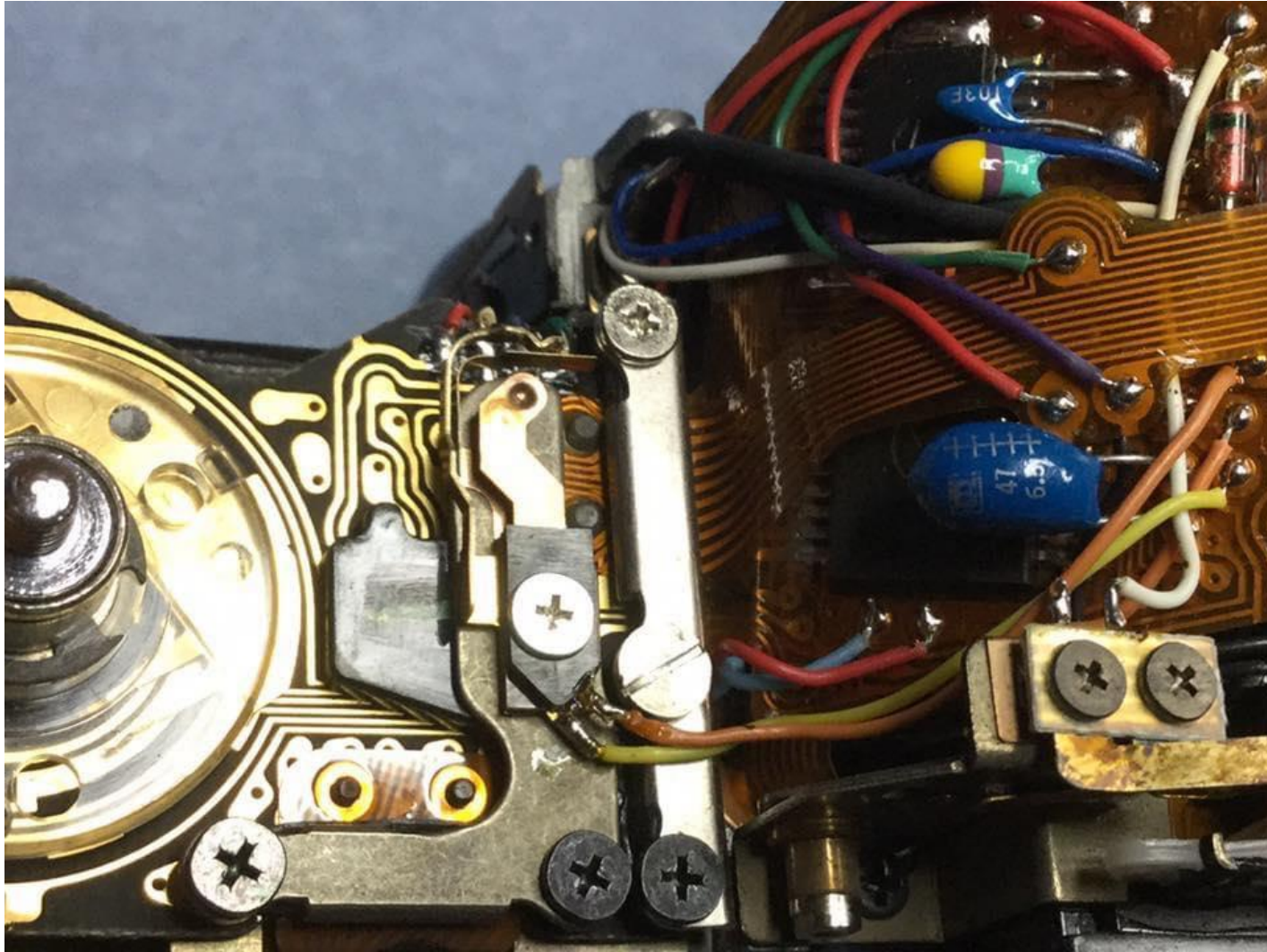
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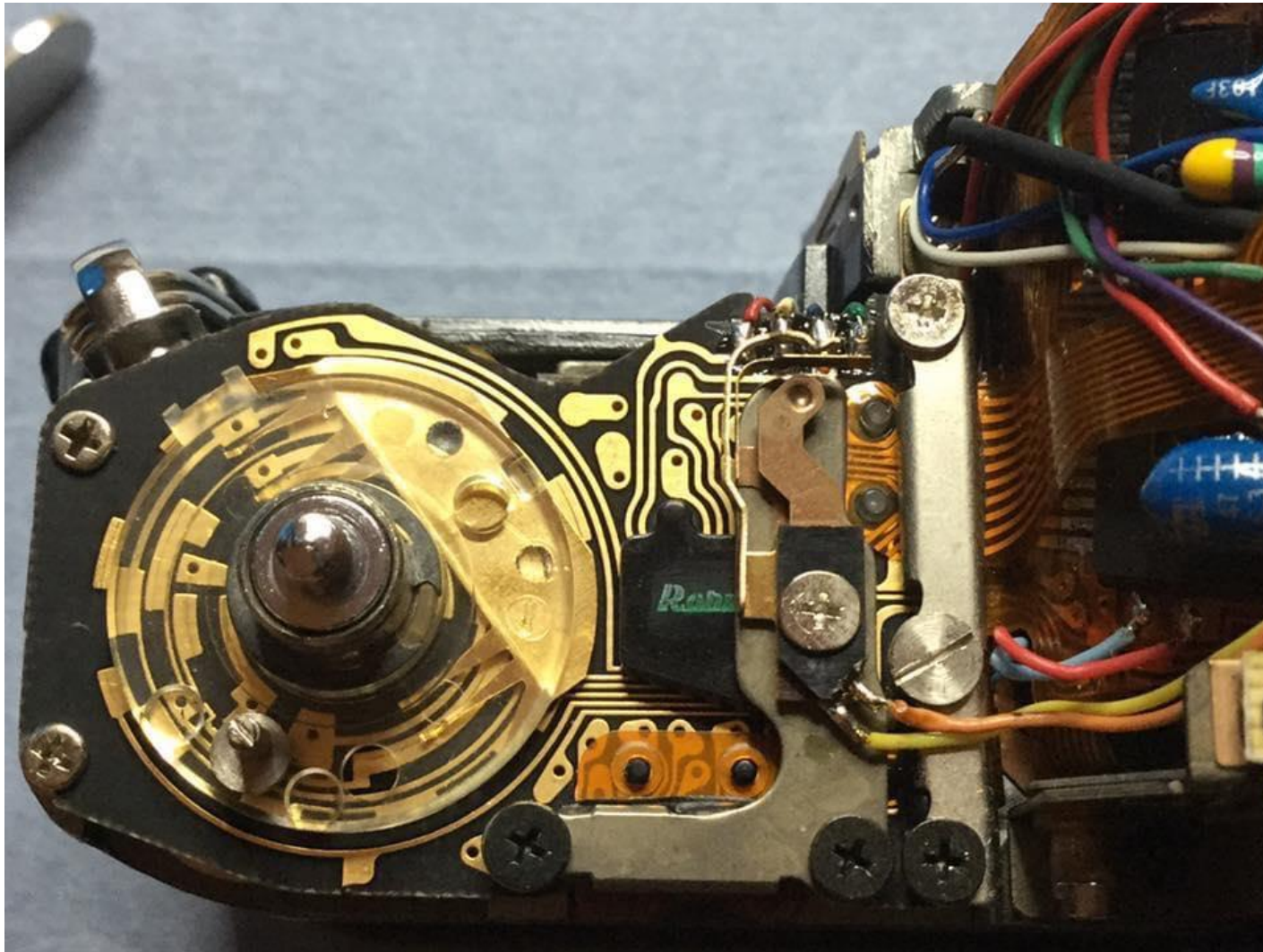
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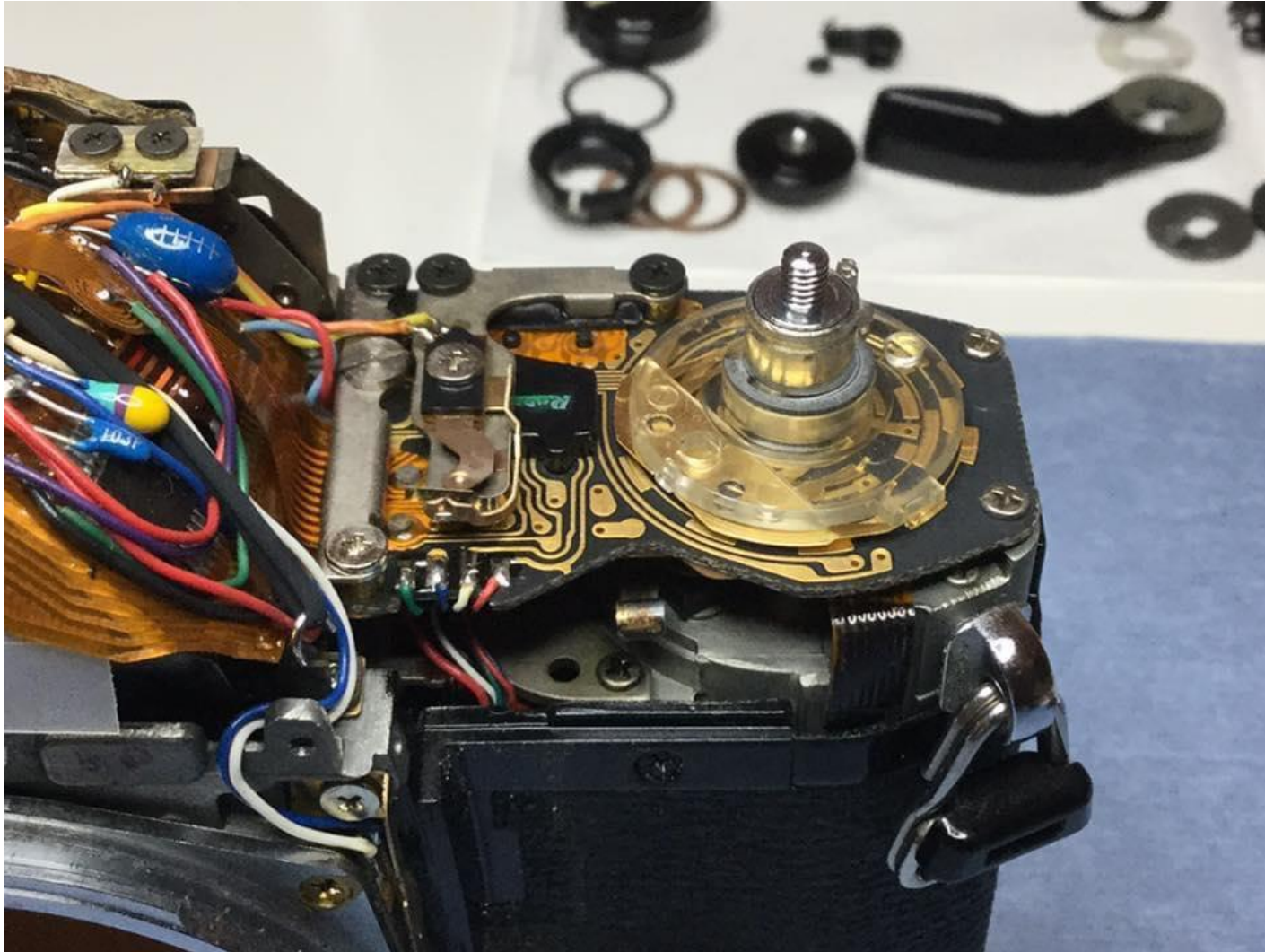
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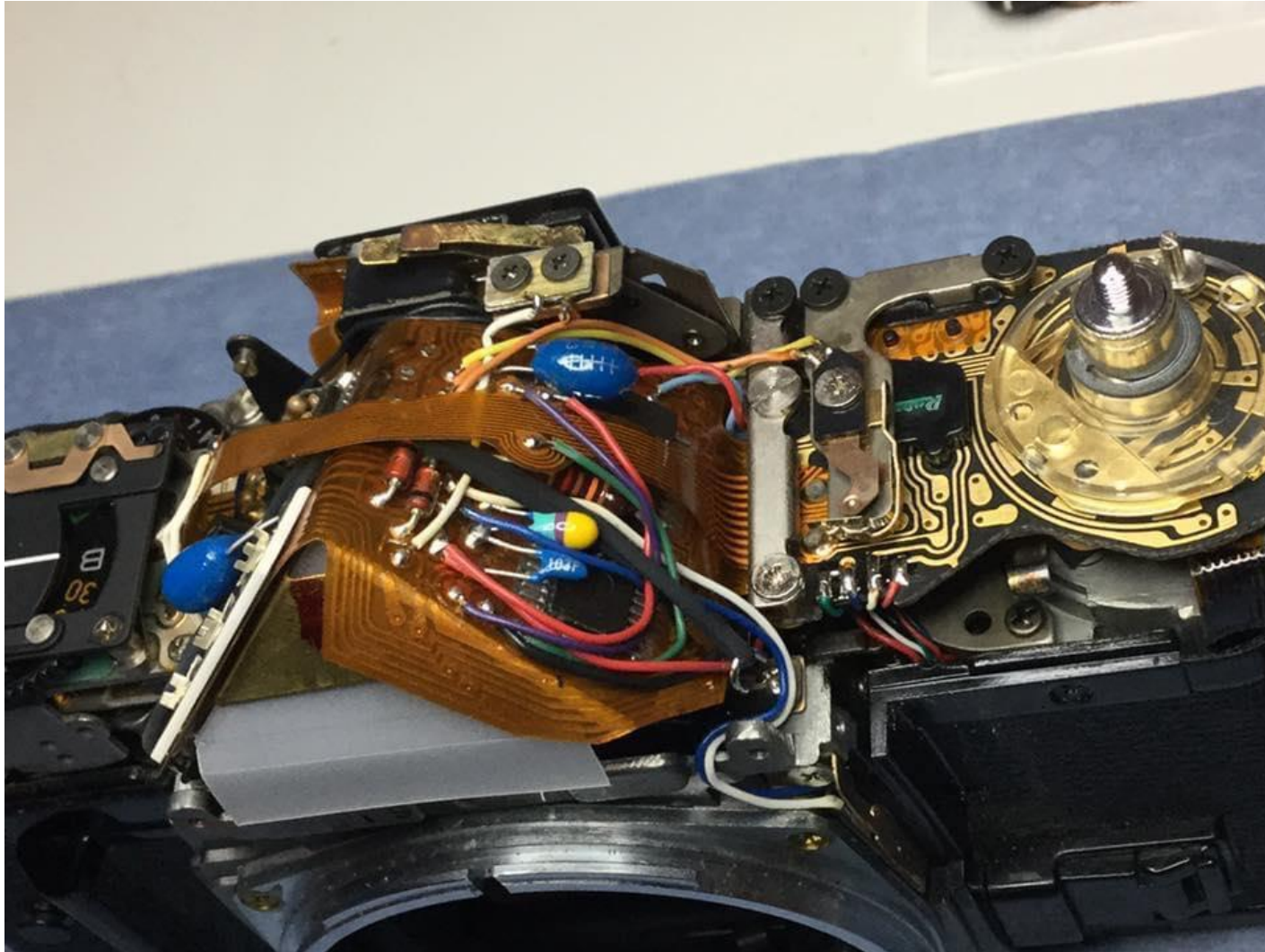
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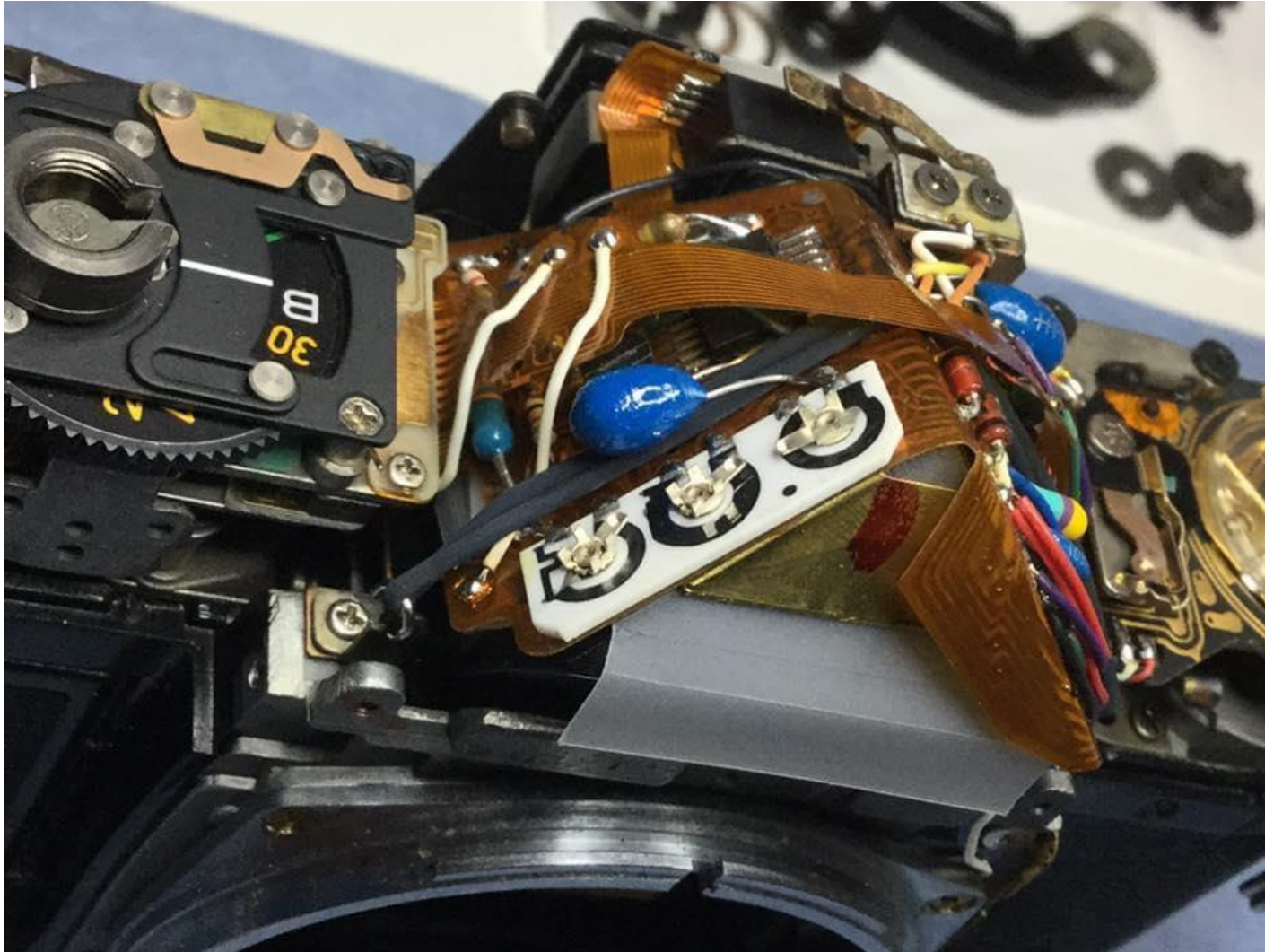
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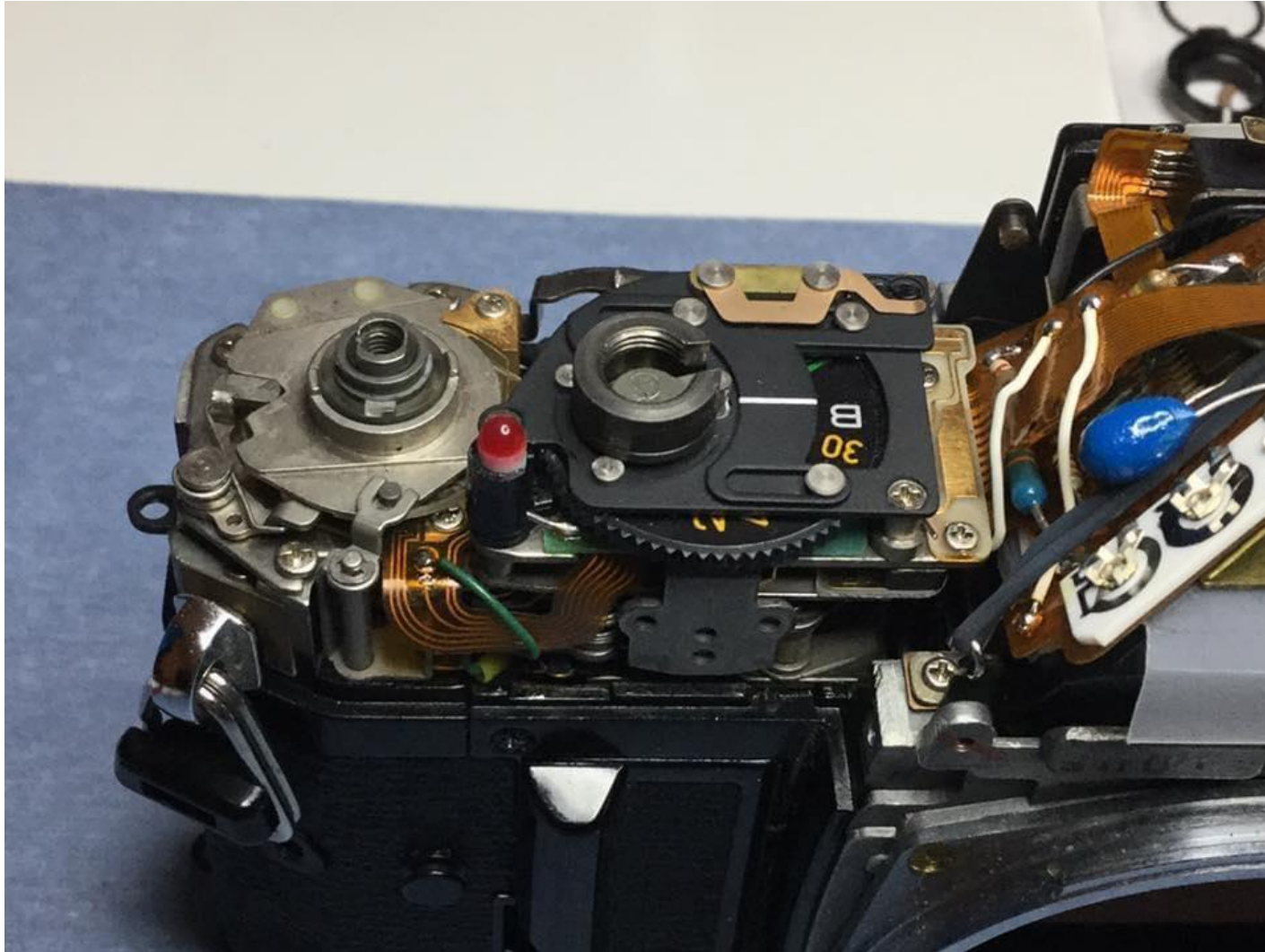
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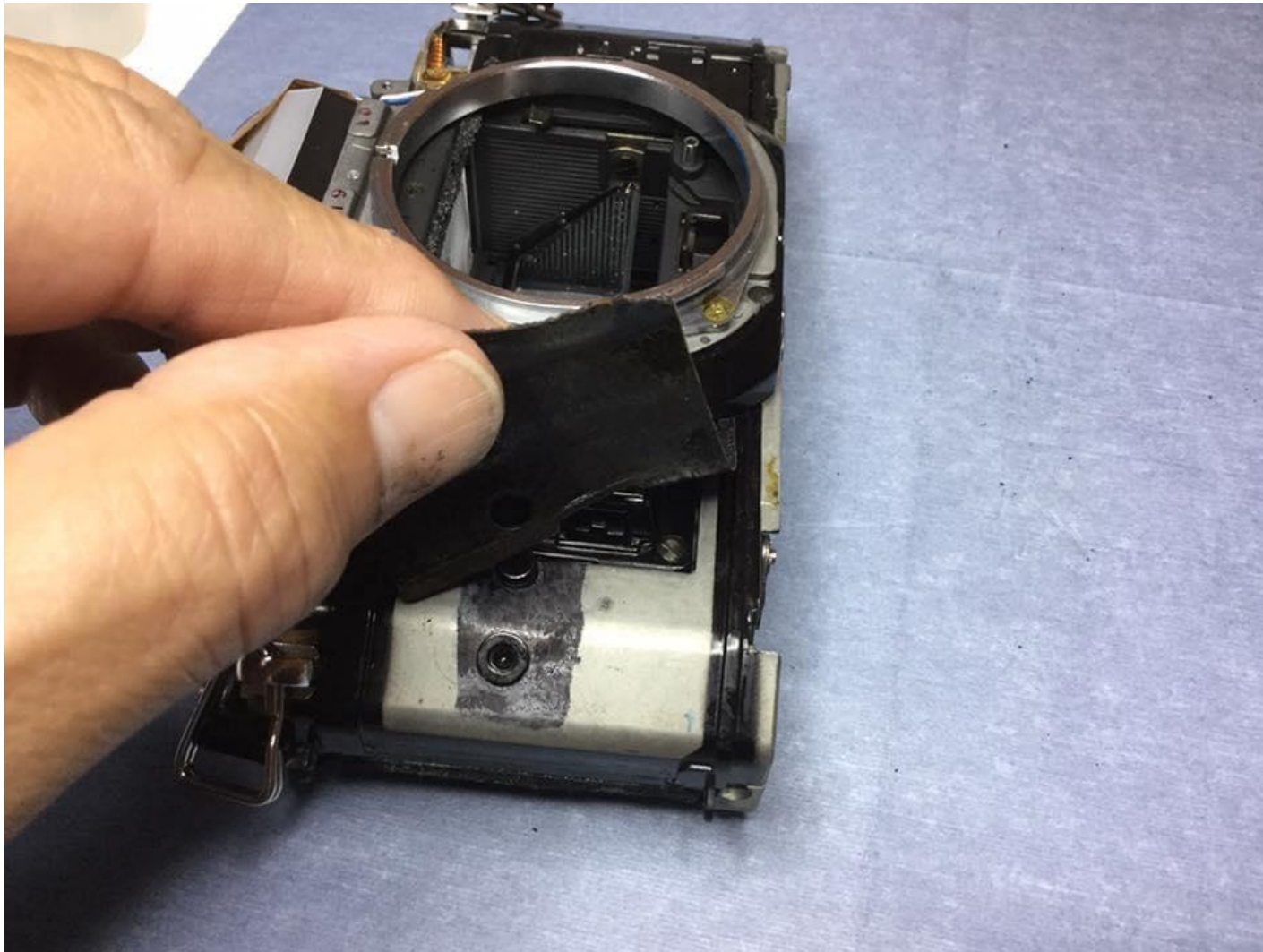
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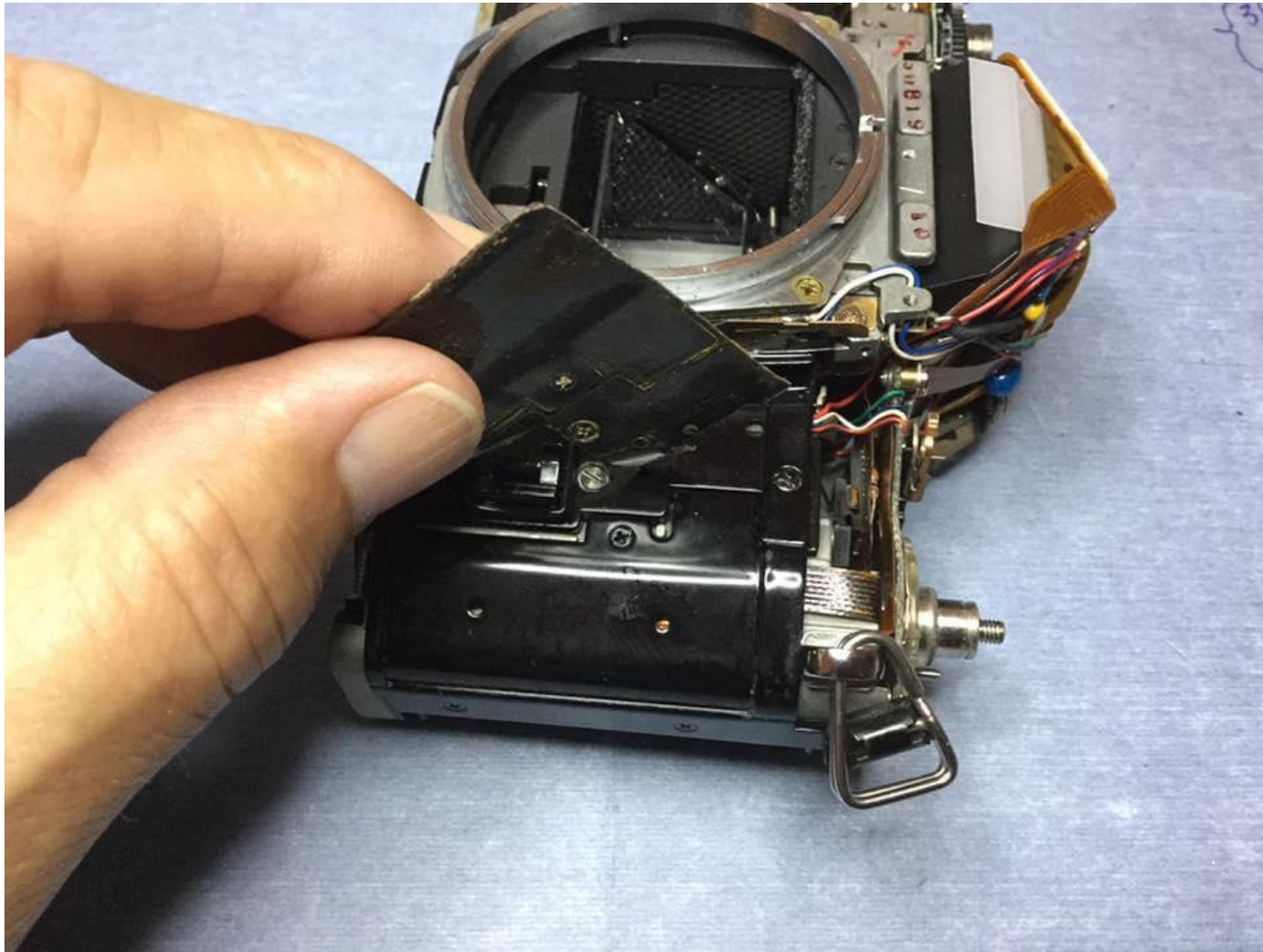
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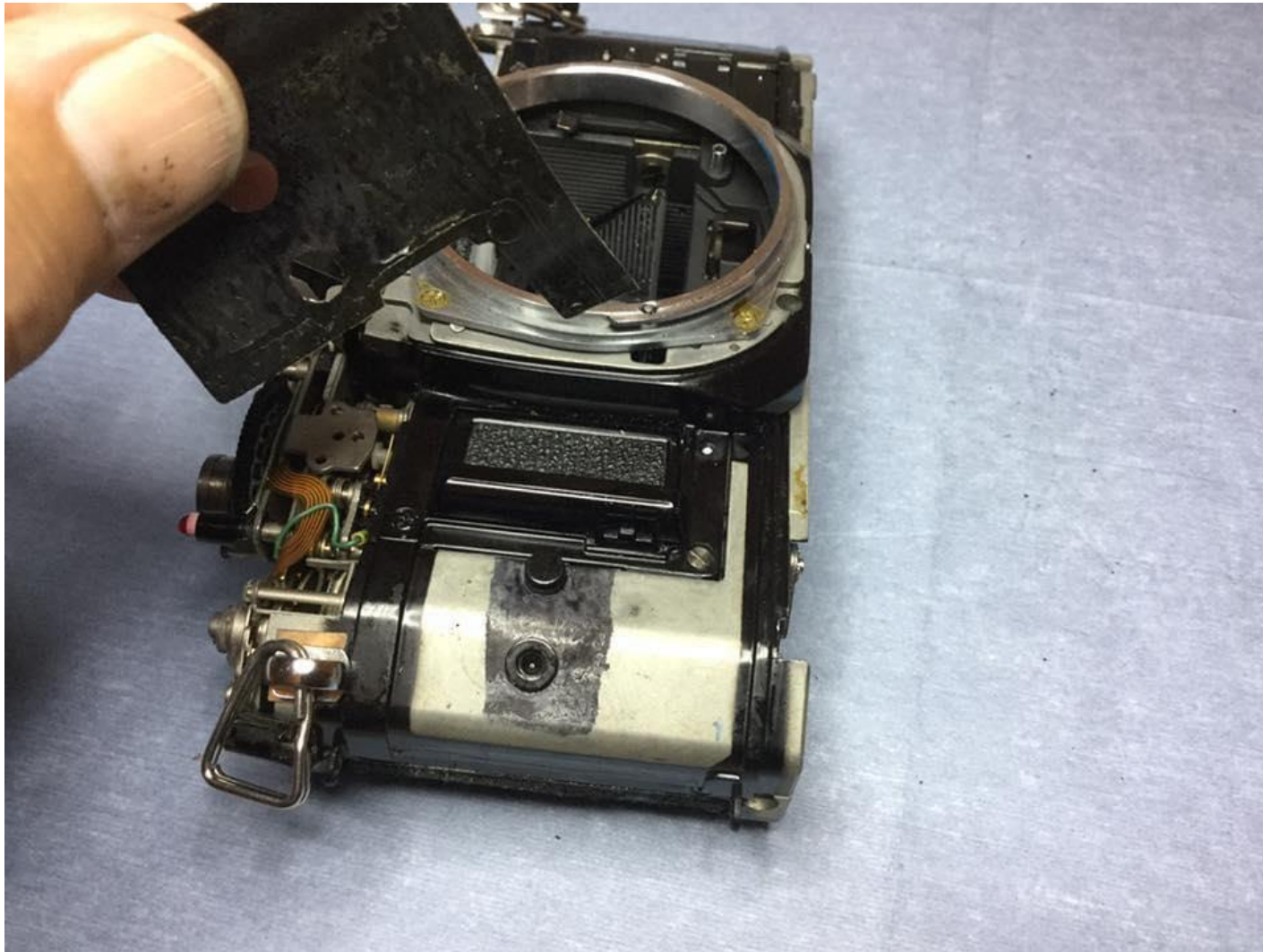
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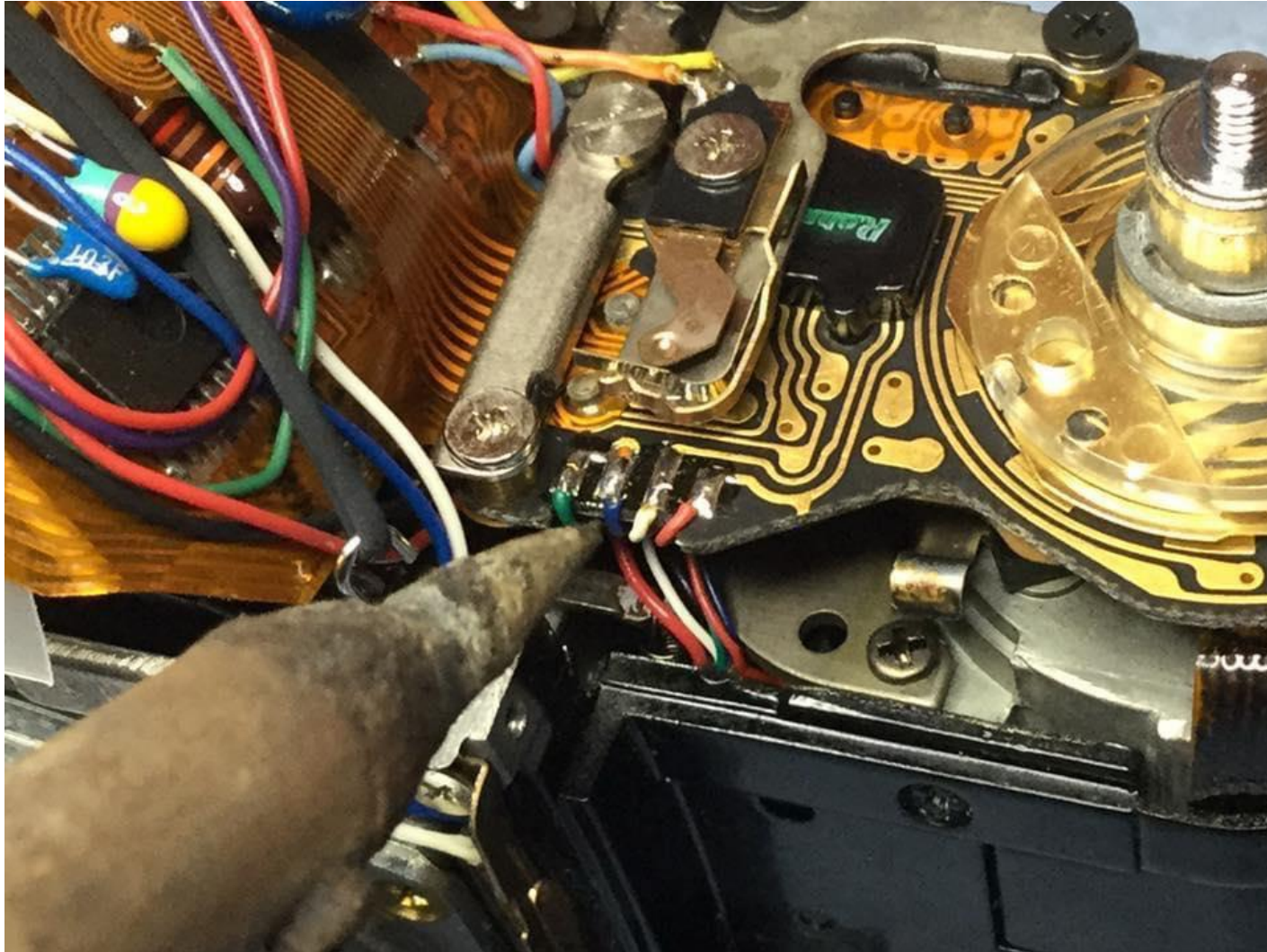
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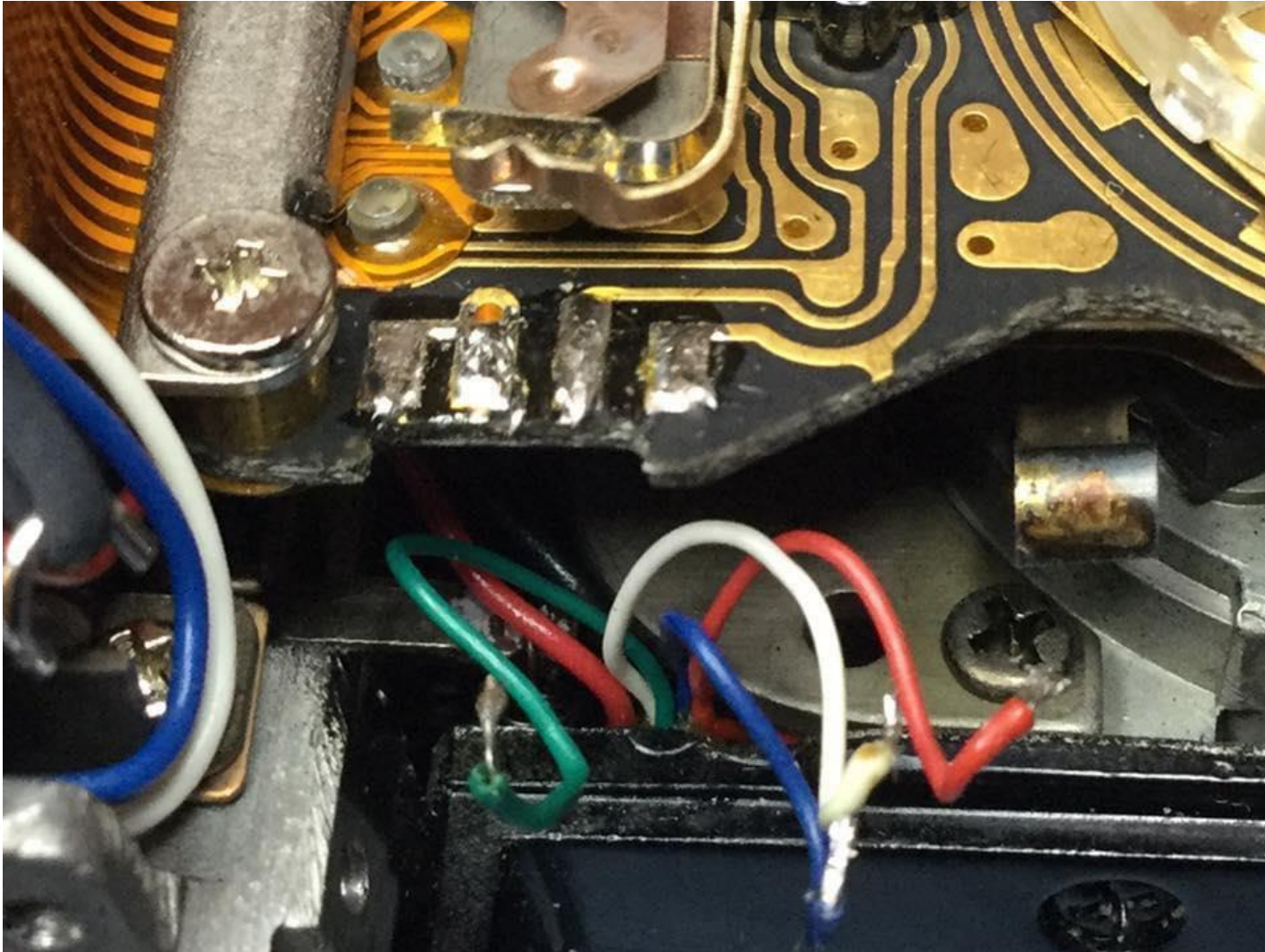
Unsolder wires from the circuit - blue, red, white and green from the front of the SV (speed value) board.





## Post #12

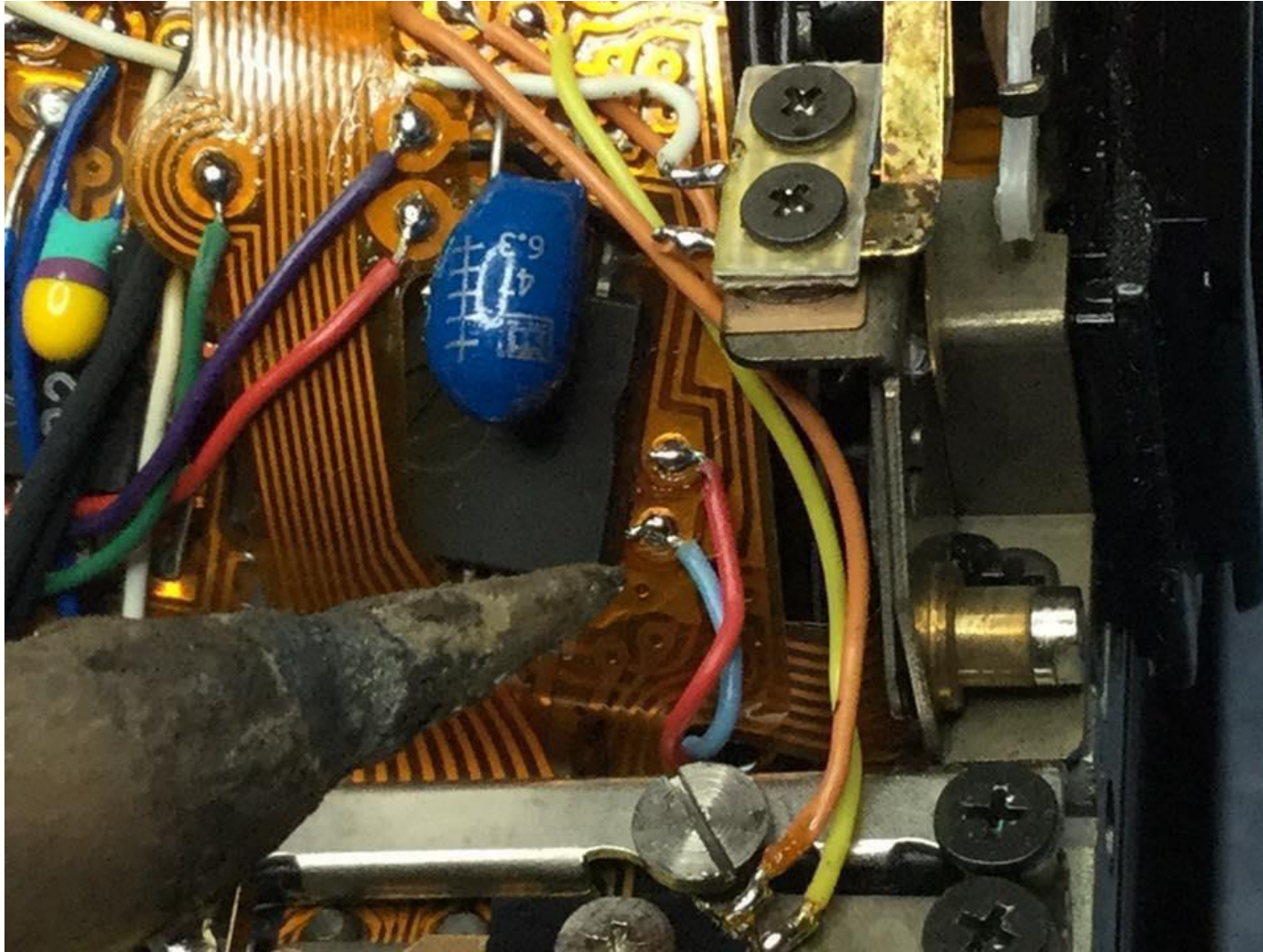
Unsolder wires from the circuit - blue, red, white and green from the front of the SV (speed value) board.





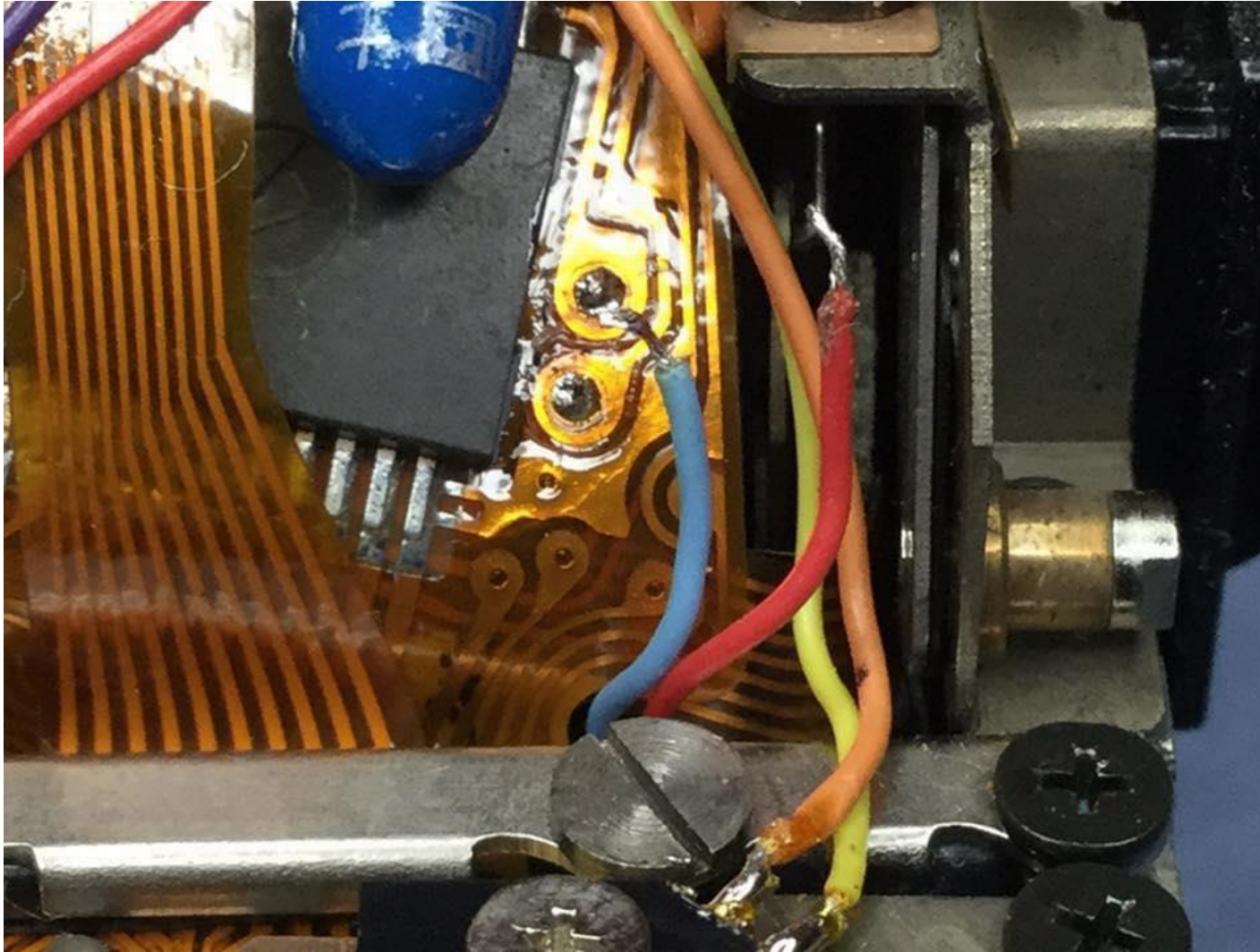
## Post #13

Unsolder wires from the flex circuit - sky blue and red S.A.V.E. (segmented aperture value electrode) wires - in early models the red wires connects to the main flex, in later models it connects to the A.T. Flex (the small flex that is on top of the rewind side main flex).



## Post #13

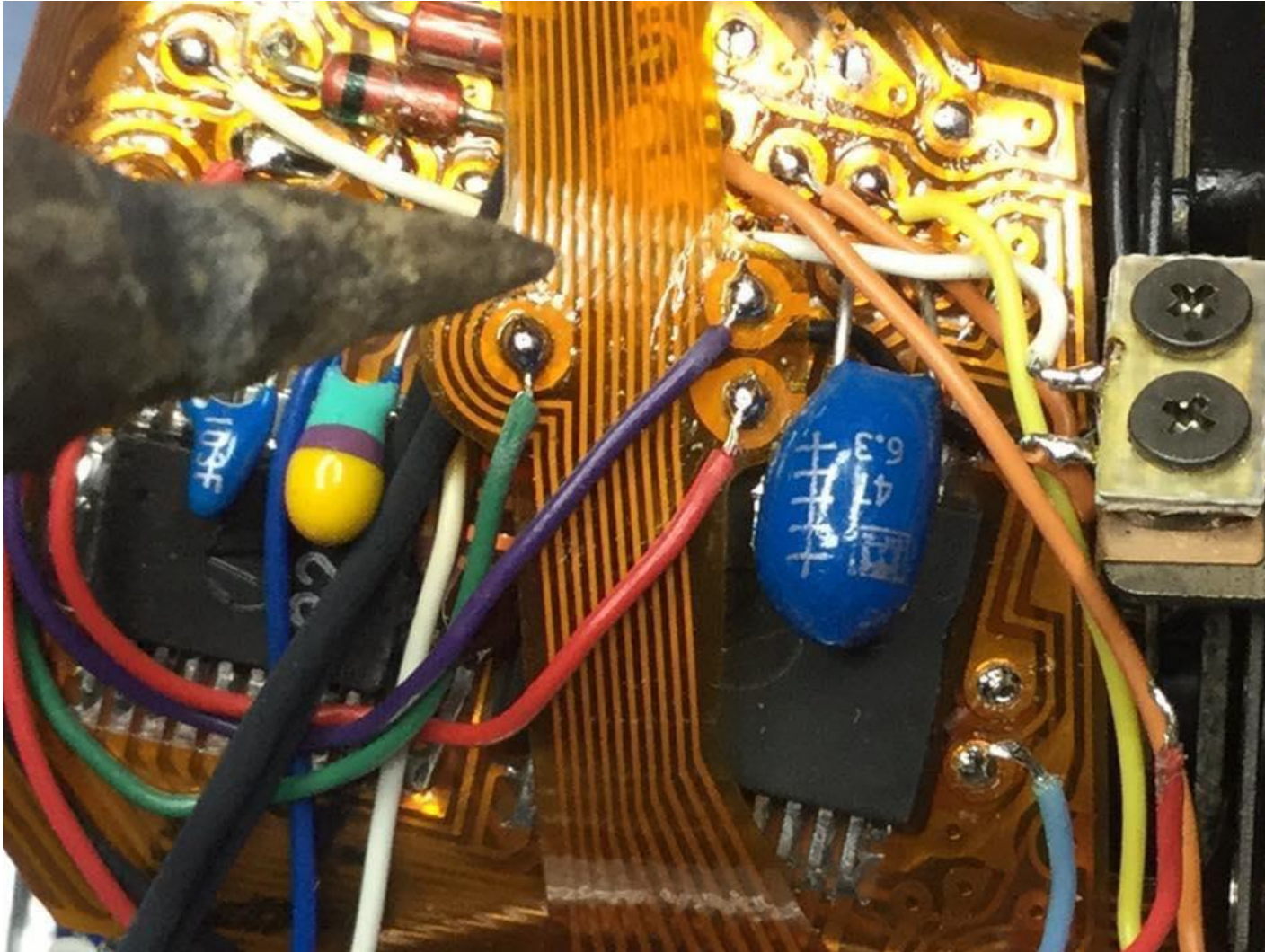
Unsolder wires from the flex circuit - sky blue and red S.A.V.E. (segmented aperture value electrode) wires - in early models the red wires connects to the main flex, in later models it connects to the A.T. Flex (the small flex that is on top of the rewind side main flex).





## Post #14

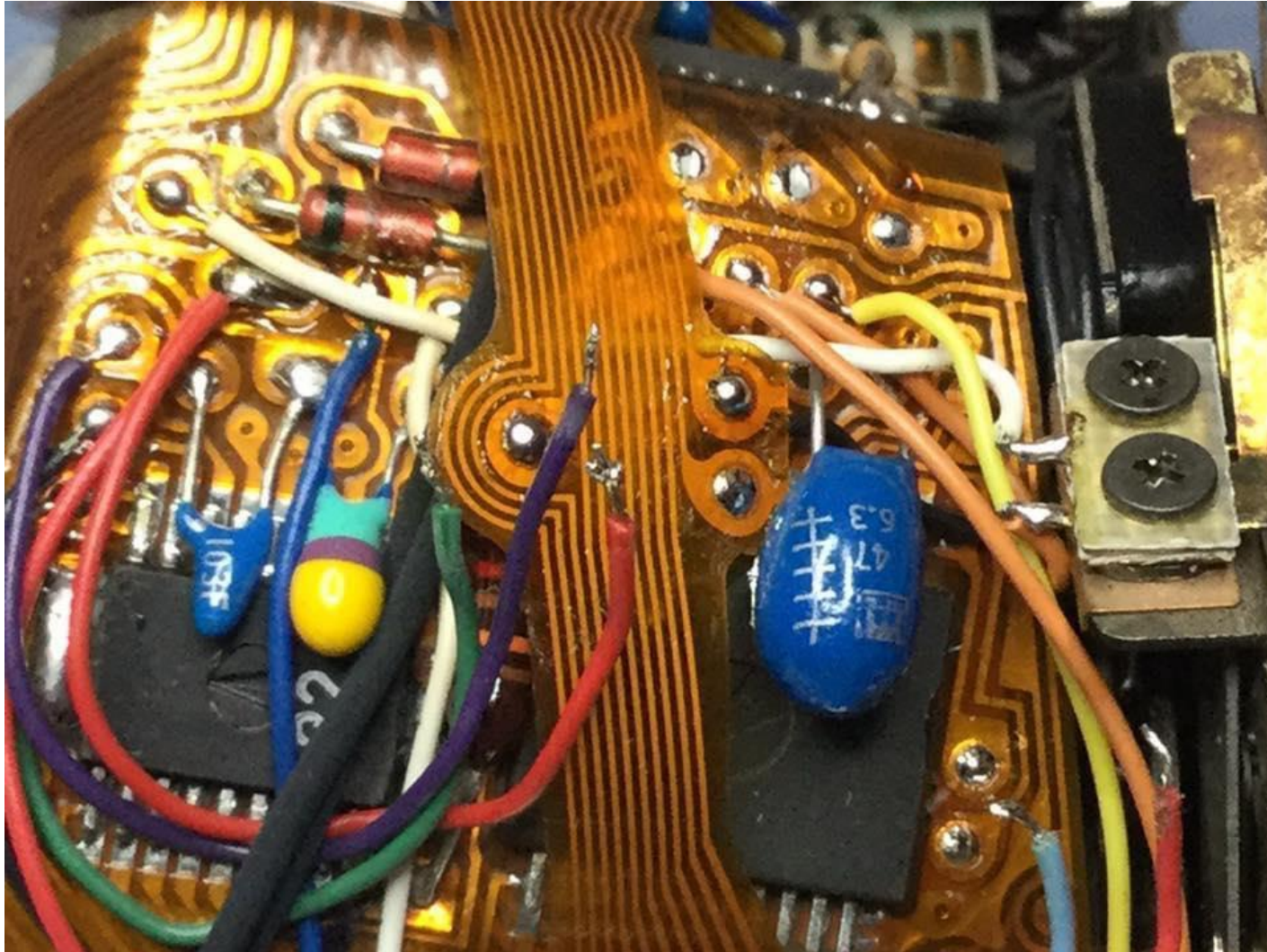
Unsolder the three S.A.V.E. adjustment wires from the A.T. Flex - red, purple and green (in some models these wires are orange, green and white - or yellow).





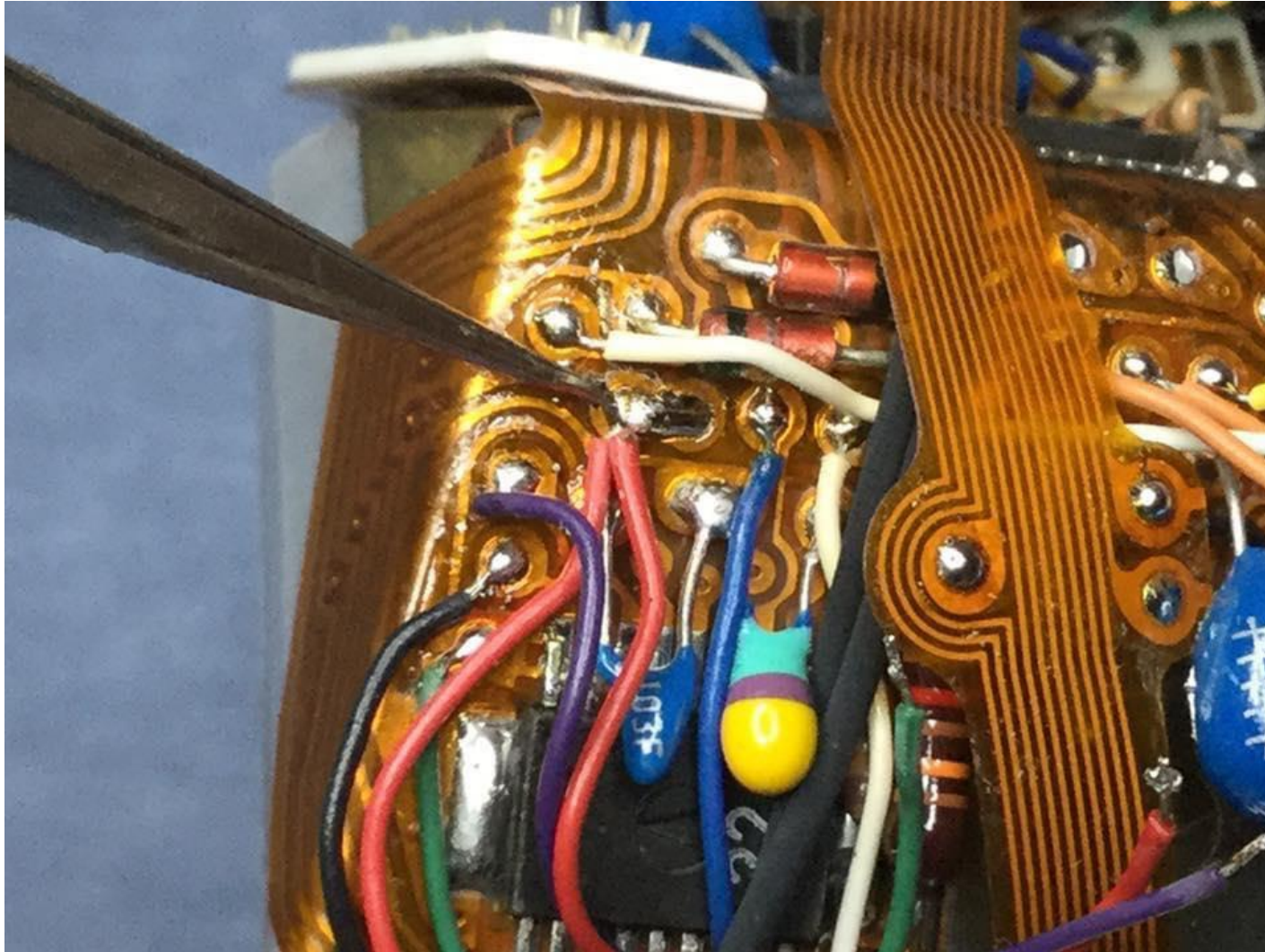
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## Post #15

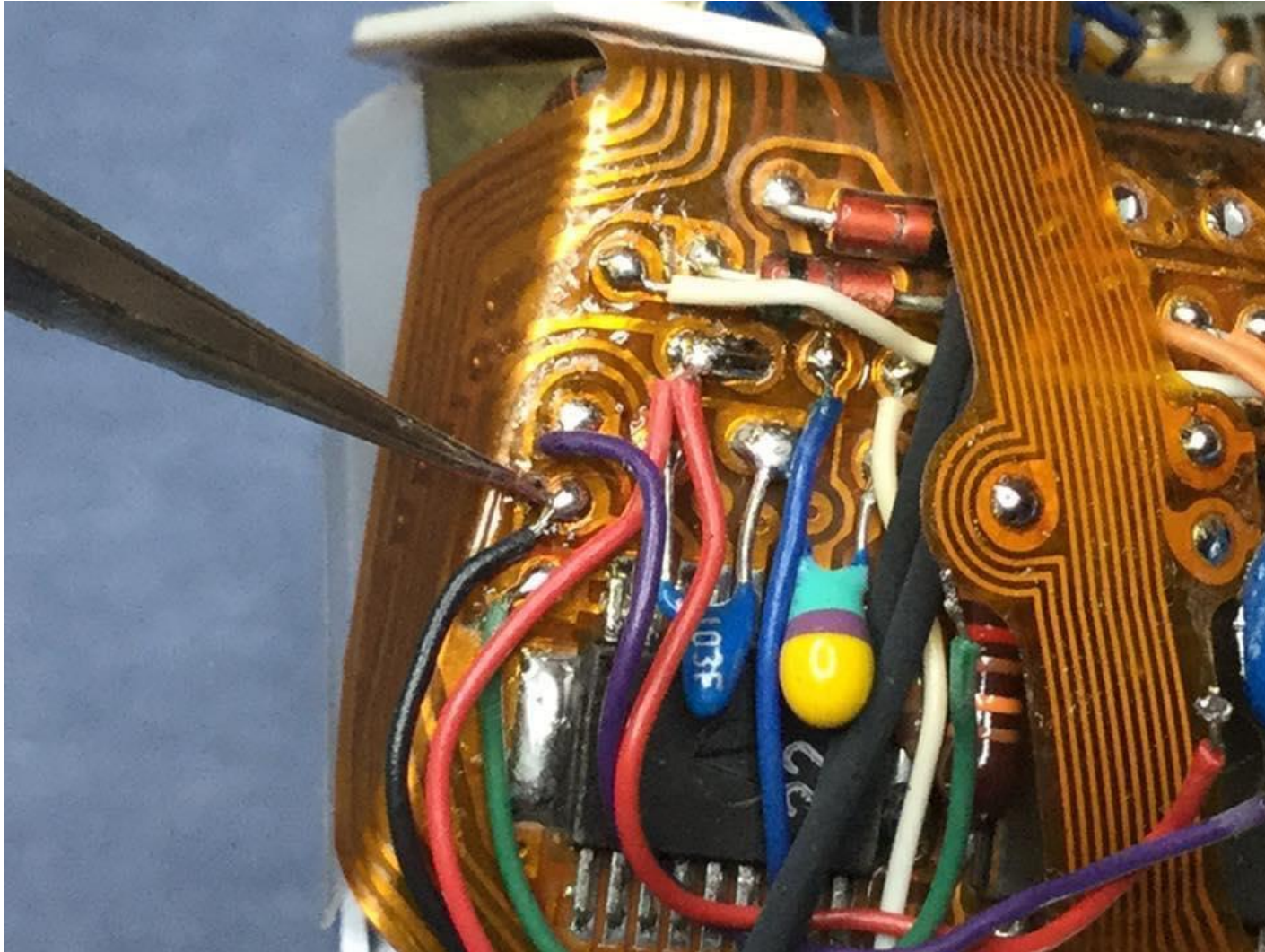
Unsolder the red and black wires from MG1 (the electro-magnet on the mirror box bottom that releases the aperture control magnet when the aperture stops down to the correct f-stop), this magnet will be visible after the front plate/mirror assembly is removed from the body.





## Post #15

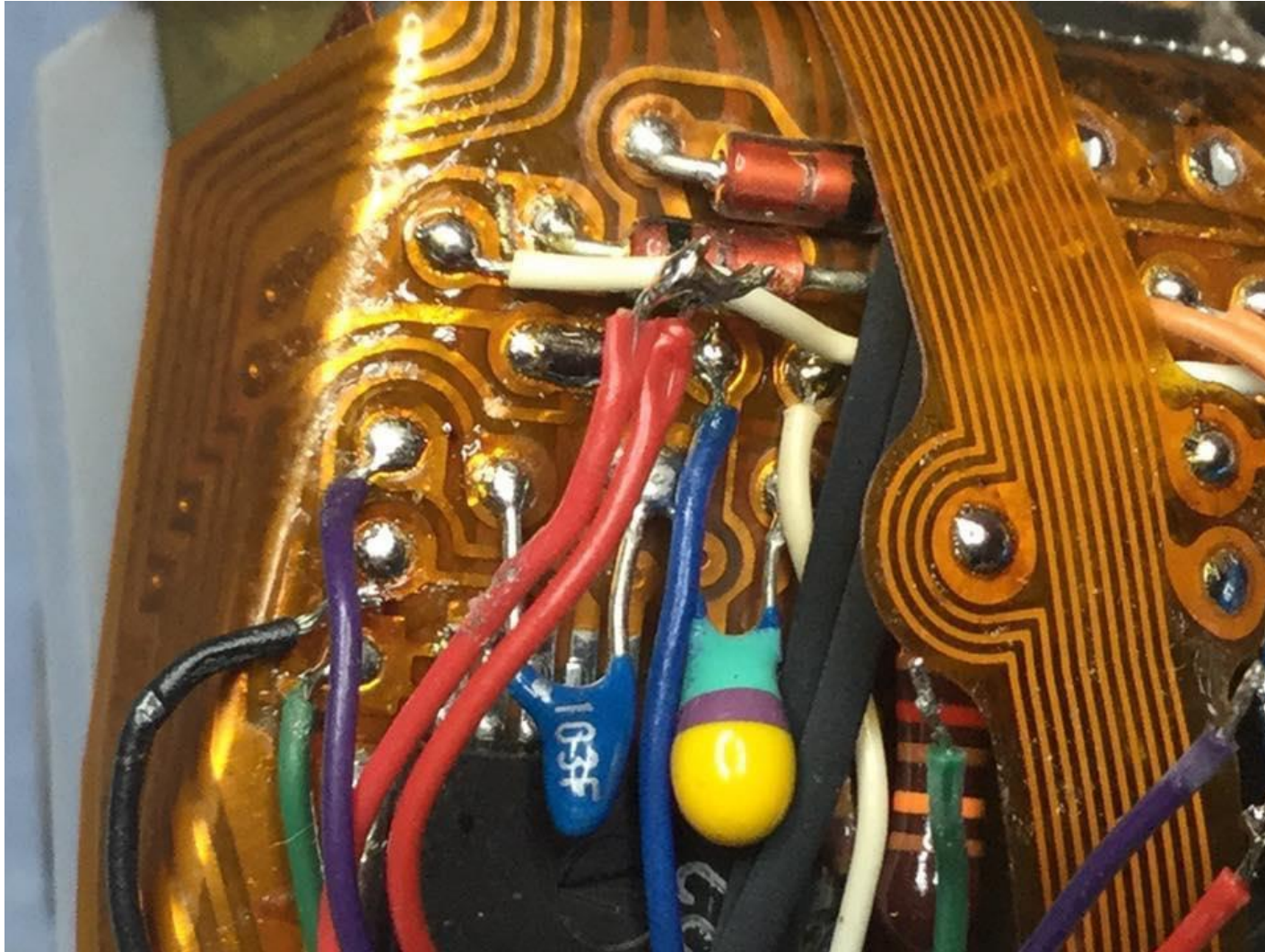
Unsolder the red and black wires from MG1 (the electro-magnet on the mirror box bottom that releases the aperture control magnet when the aperture stops down to the correct f-stop), this magnet will be visible after the front plate/mirror assembly is removed from the body.





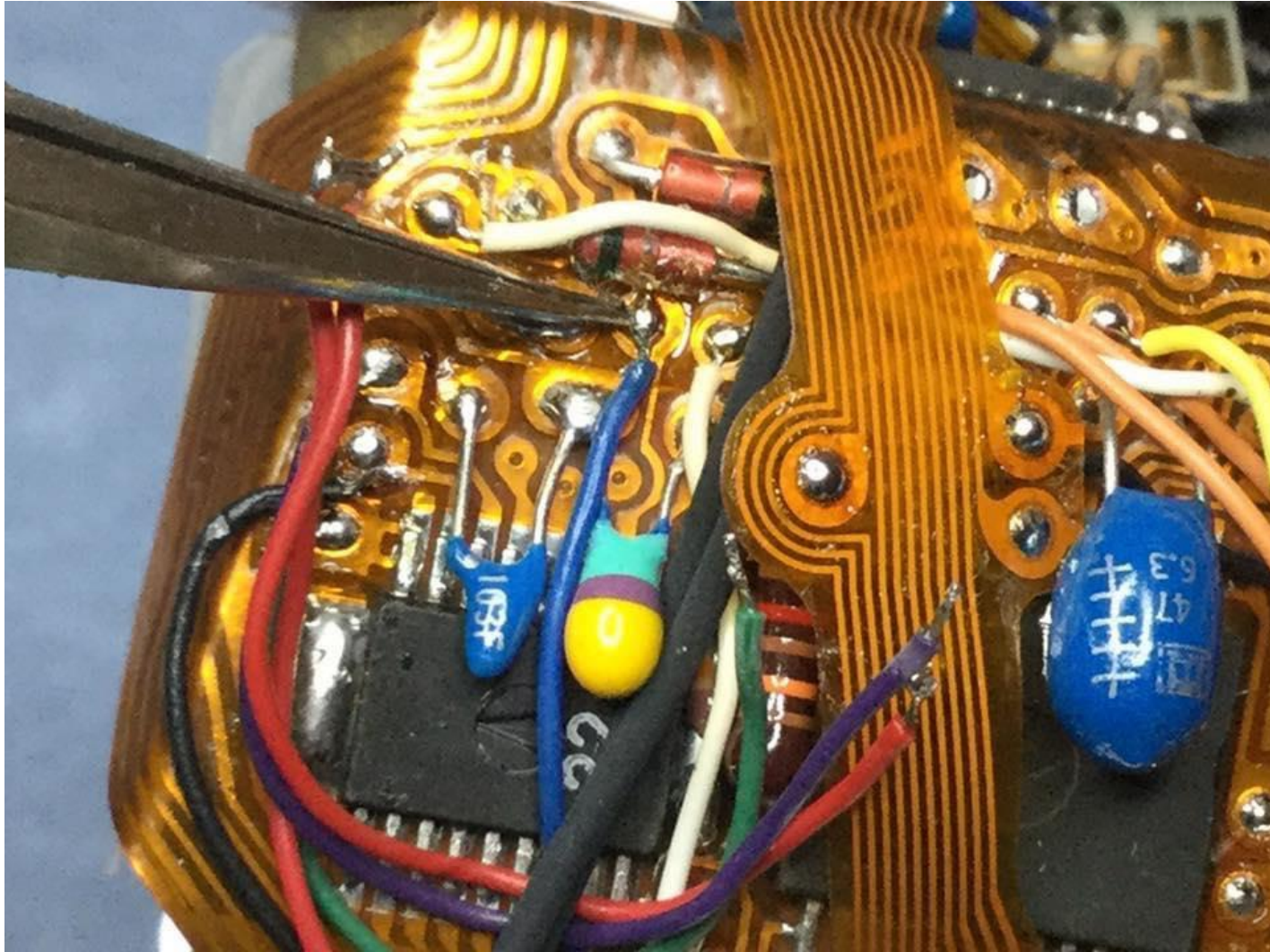
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Unsolder the red and black wires from MG1 (the electro-magnet on the mirror box bottom that releases the aperture control magnet when the aperture stops down to the correct f-stop), this magnet will be visible after the front plate/mirror assembly is removed from the body.



## Post #16

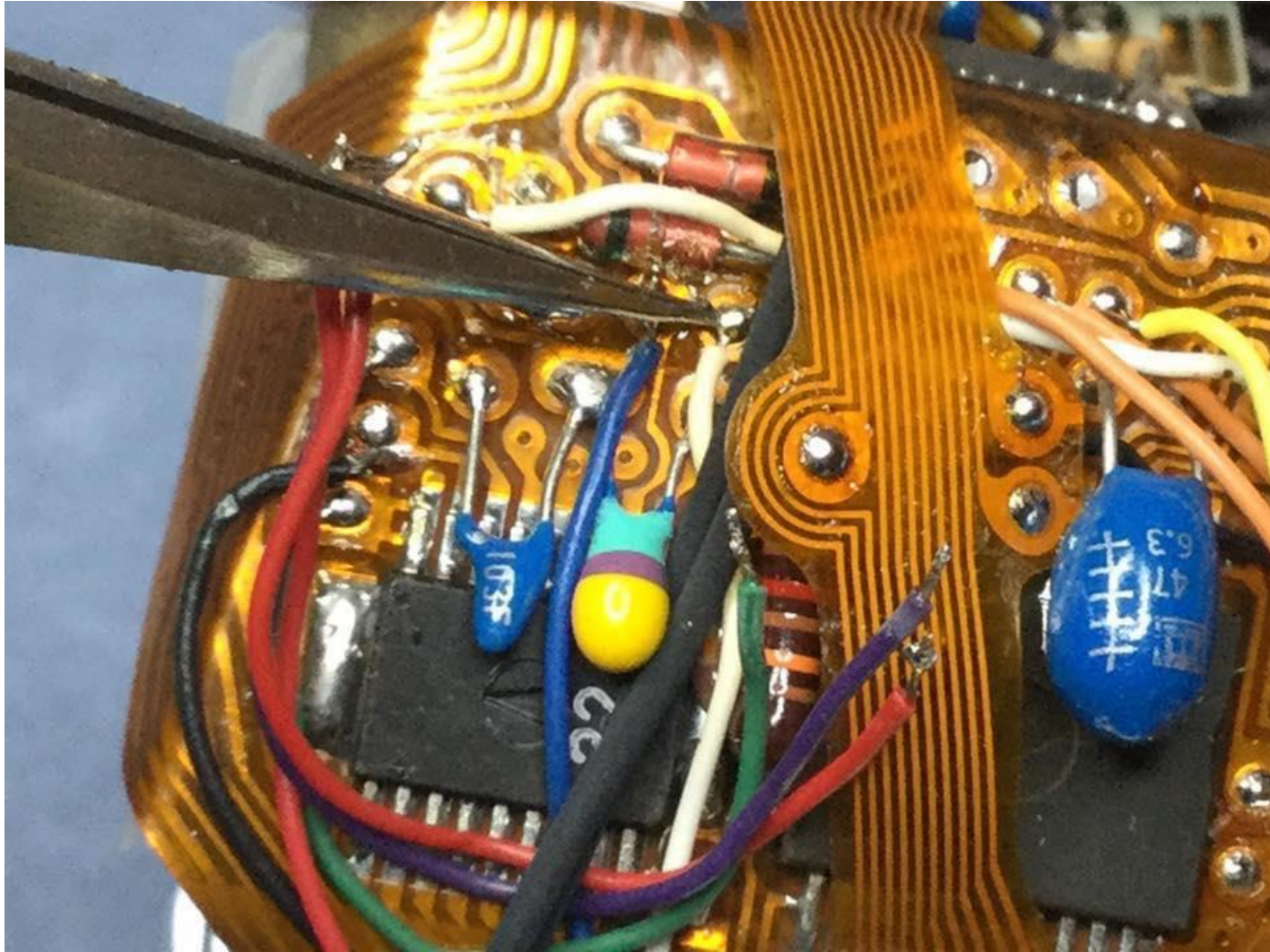
Unsolder the blue and white wires that come from the front plate switches (the preview and memory hold switches).





## Post #16

Unsolder the blue and white wires that come from the front plate switches (the preview and memory hold switches).





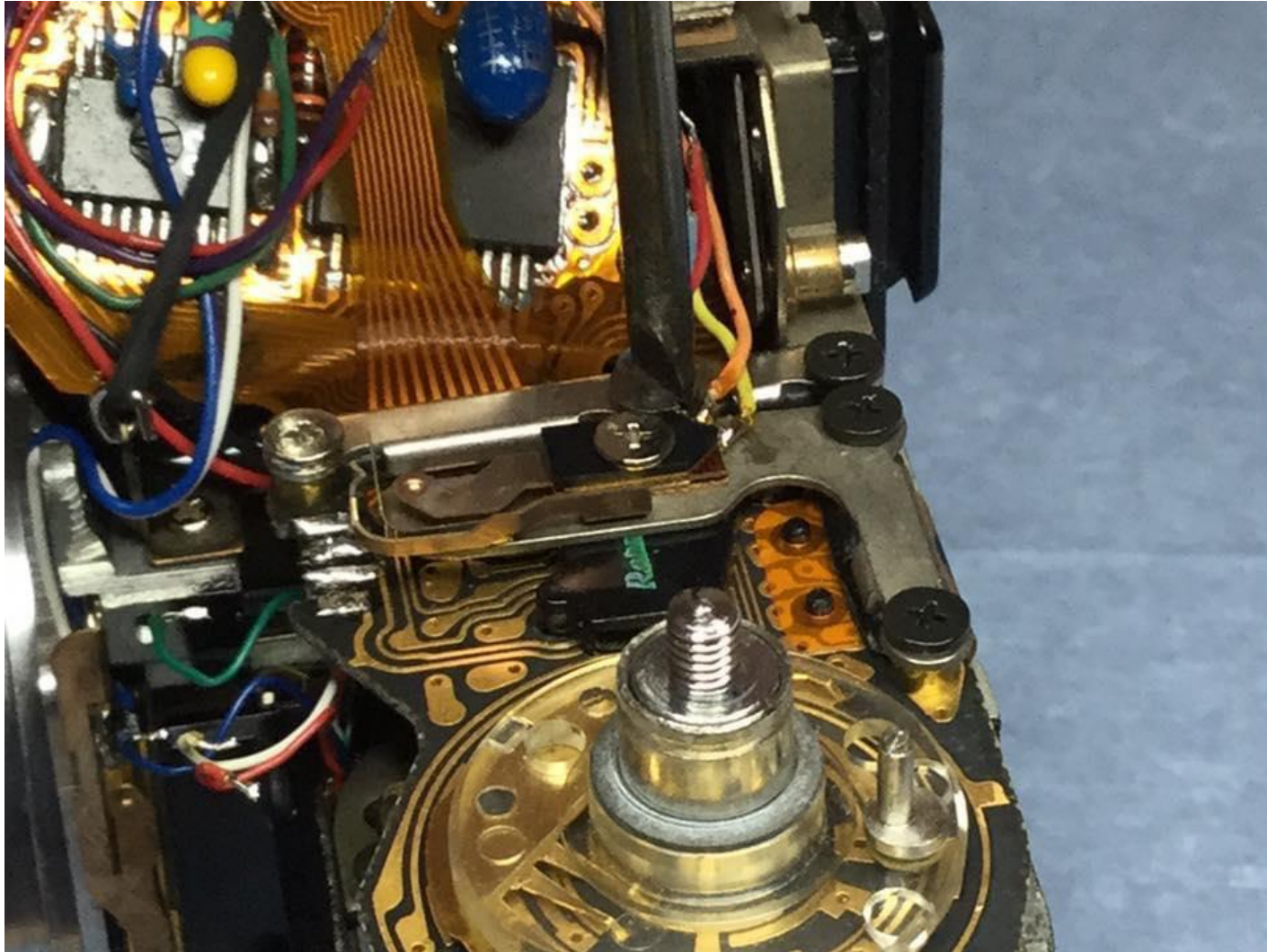
## Post #16

Unsolder the blue and white wires that come from the front plate switches (the preview and memory hold switches).



## Post #17

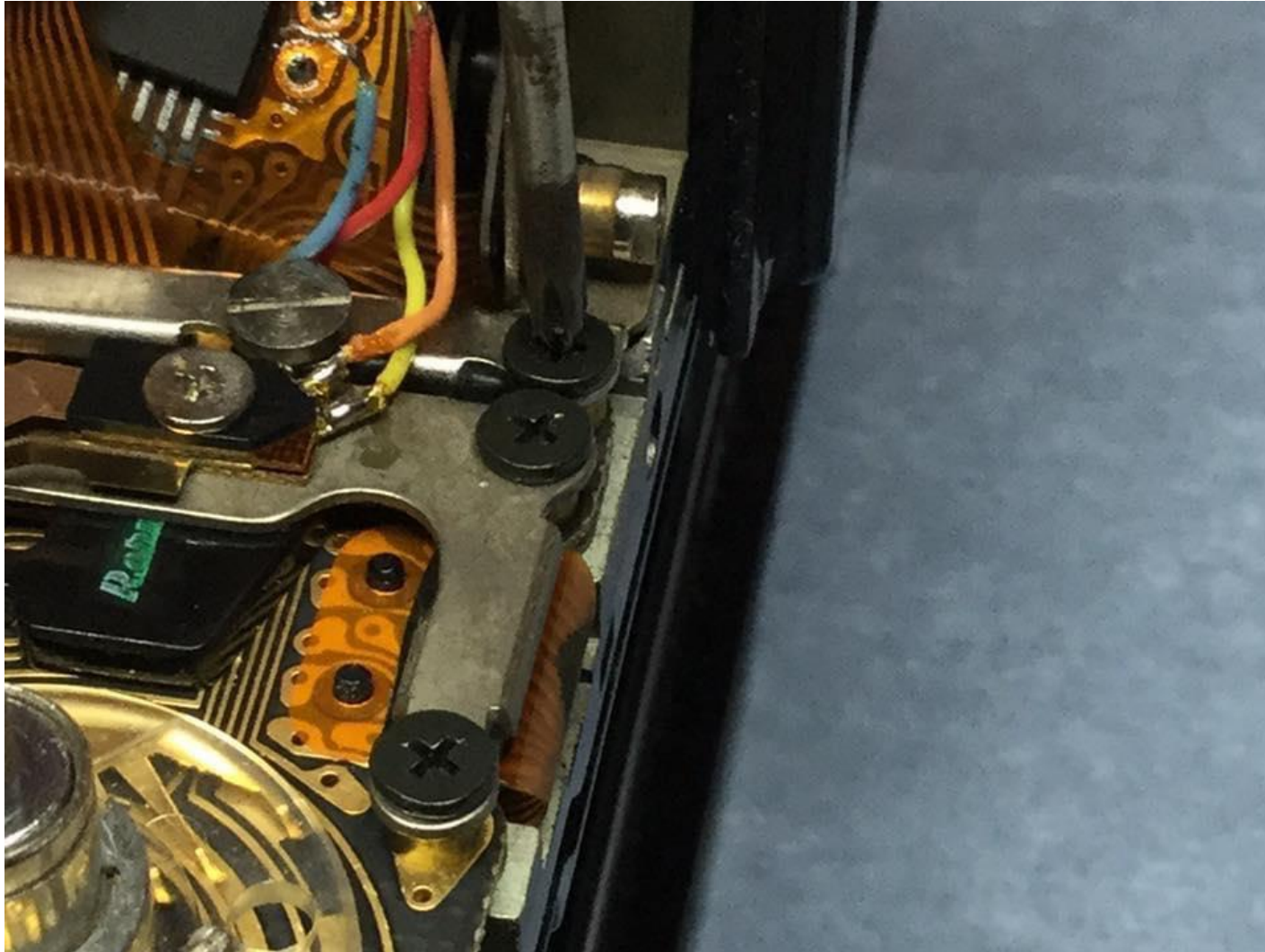
Loosen but do not remove the screw shown in the photos (slotted screw) holding the flex connector bar for the S.A.V.E. flex connector.





## Post #18

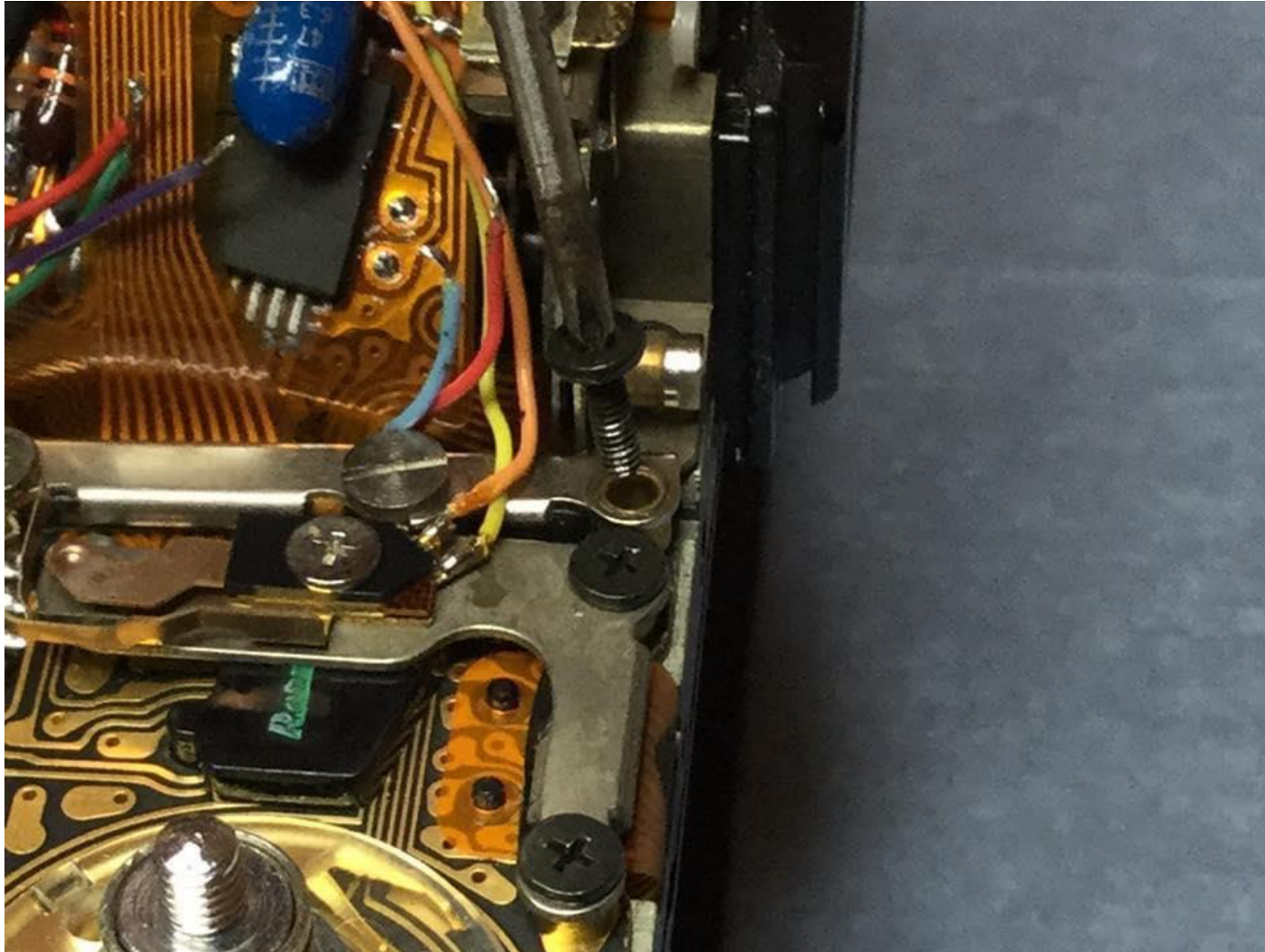
Remove the cross-point screw holding the S.A.V.E. connector bar, lift off the bar and free the flex connector, be careful not to damage the flexible circuits, they are easy to tear and difficult to add a jumper wire to repair the broken connection.





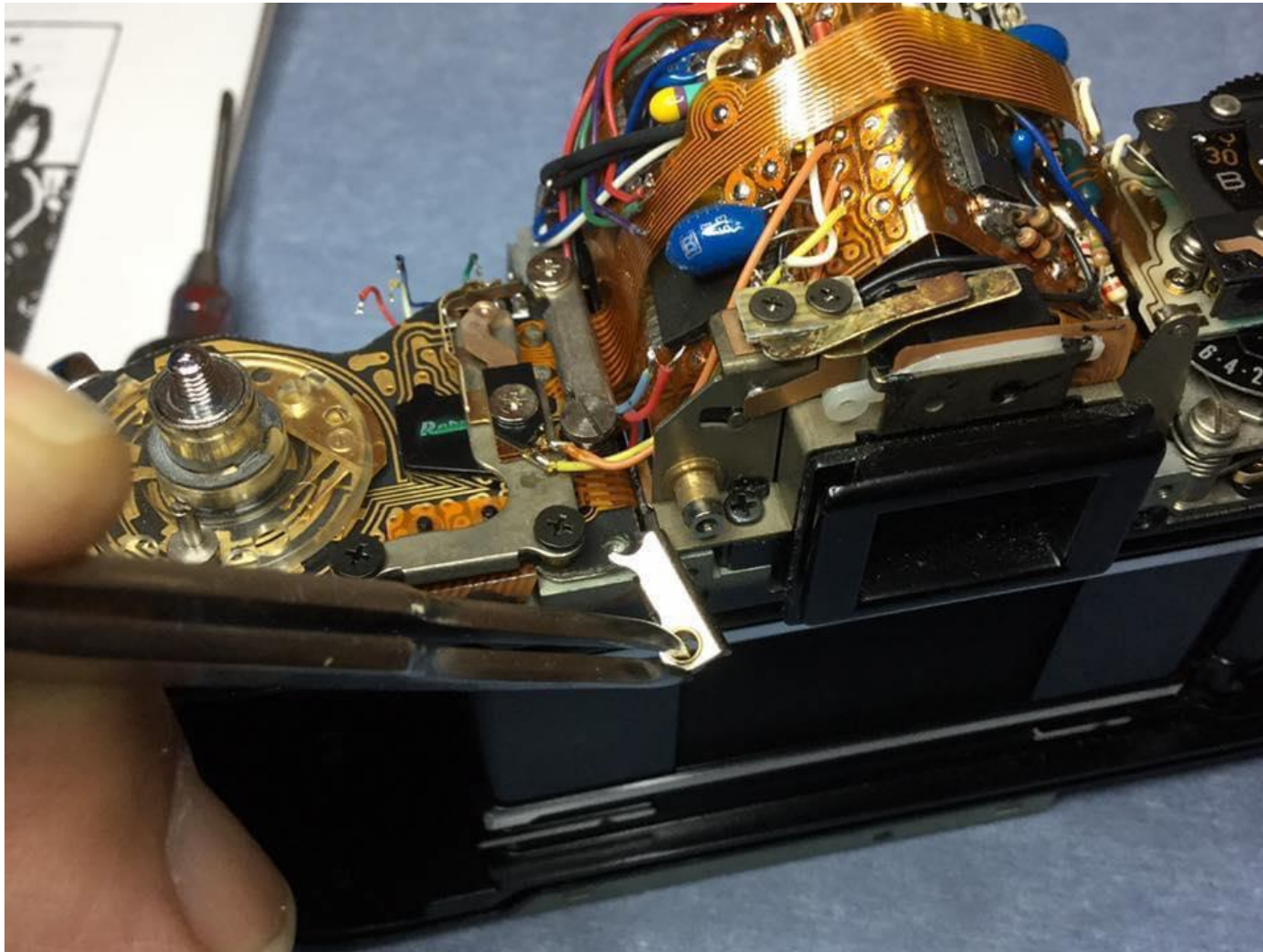
## Post #18

Remove the cross-point screw holding the S.A.V.E. connector bar, lift off the bar and free the flex connector, be careful not to damage the flexible circuits, they are easy to tear and difficult to add a jumper wire to repair the broken connection.



## Post #18

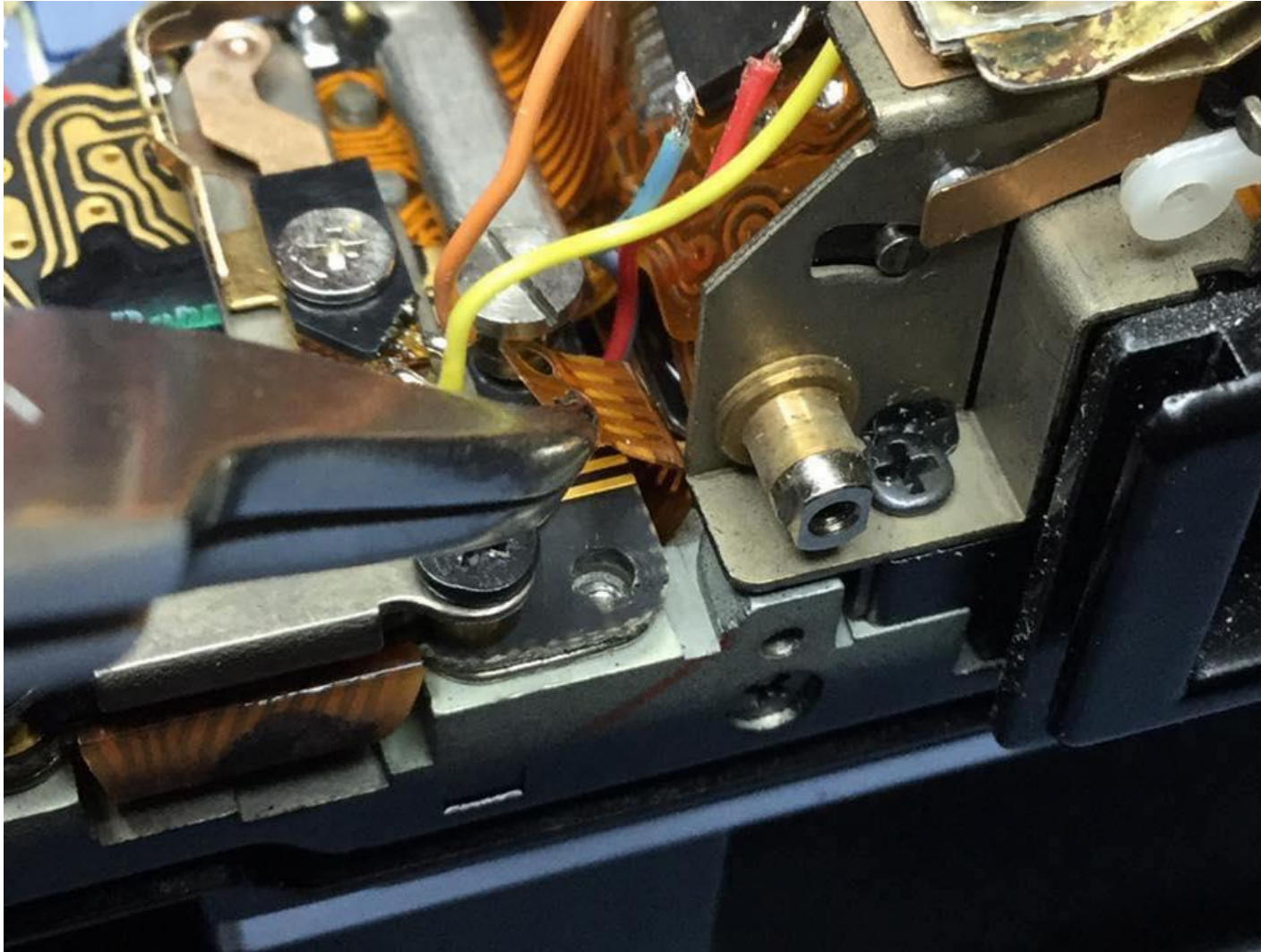
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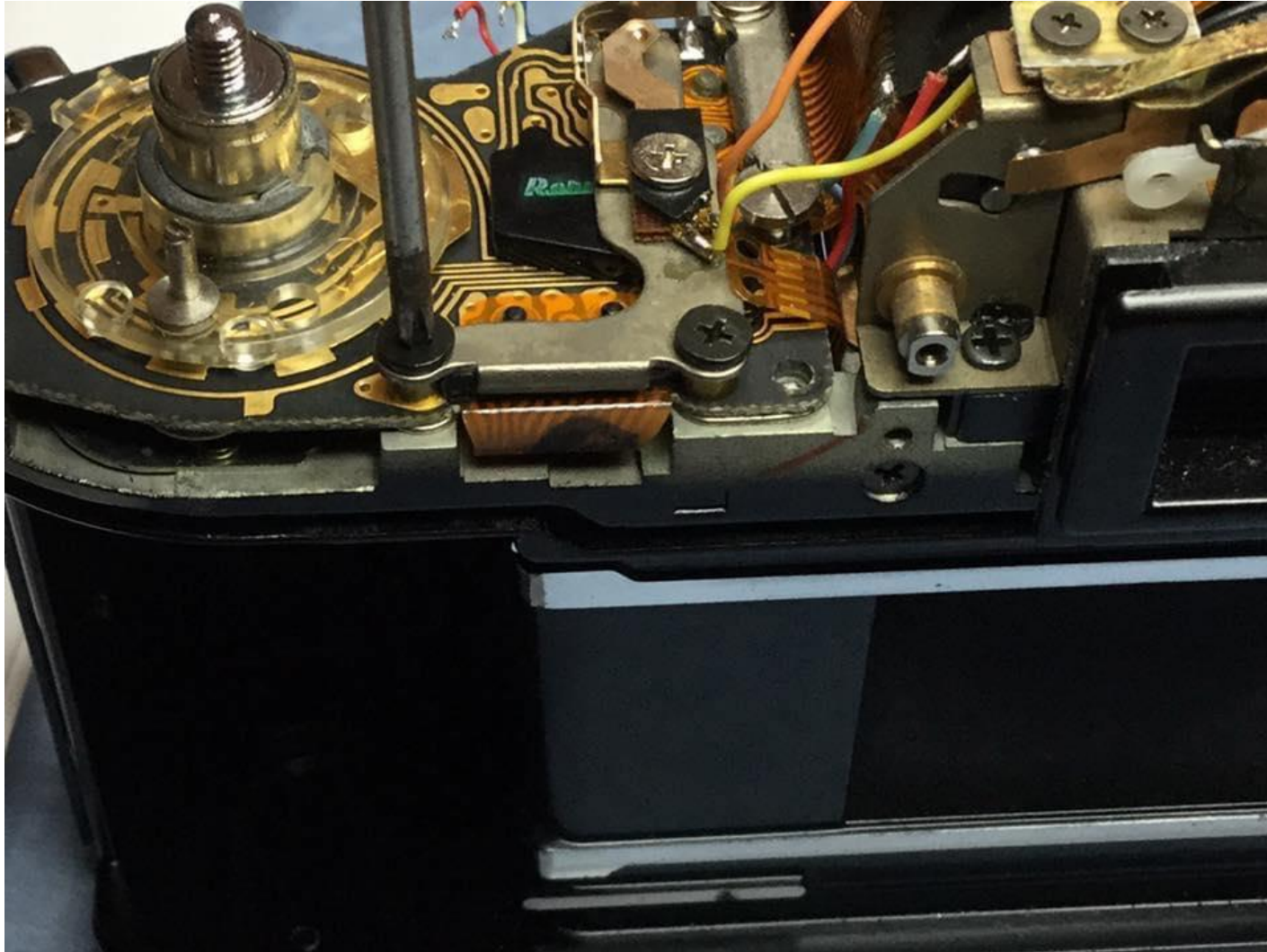
Remove the cross-point screw holding the S.A.V.E. connector bar, lift off the bar and free the flex connector, be careful not to damage the flexible circuits, they are easy to tear and difficult to add a jumper wire to repair the broken connection.





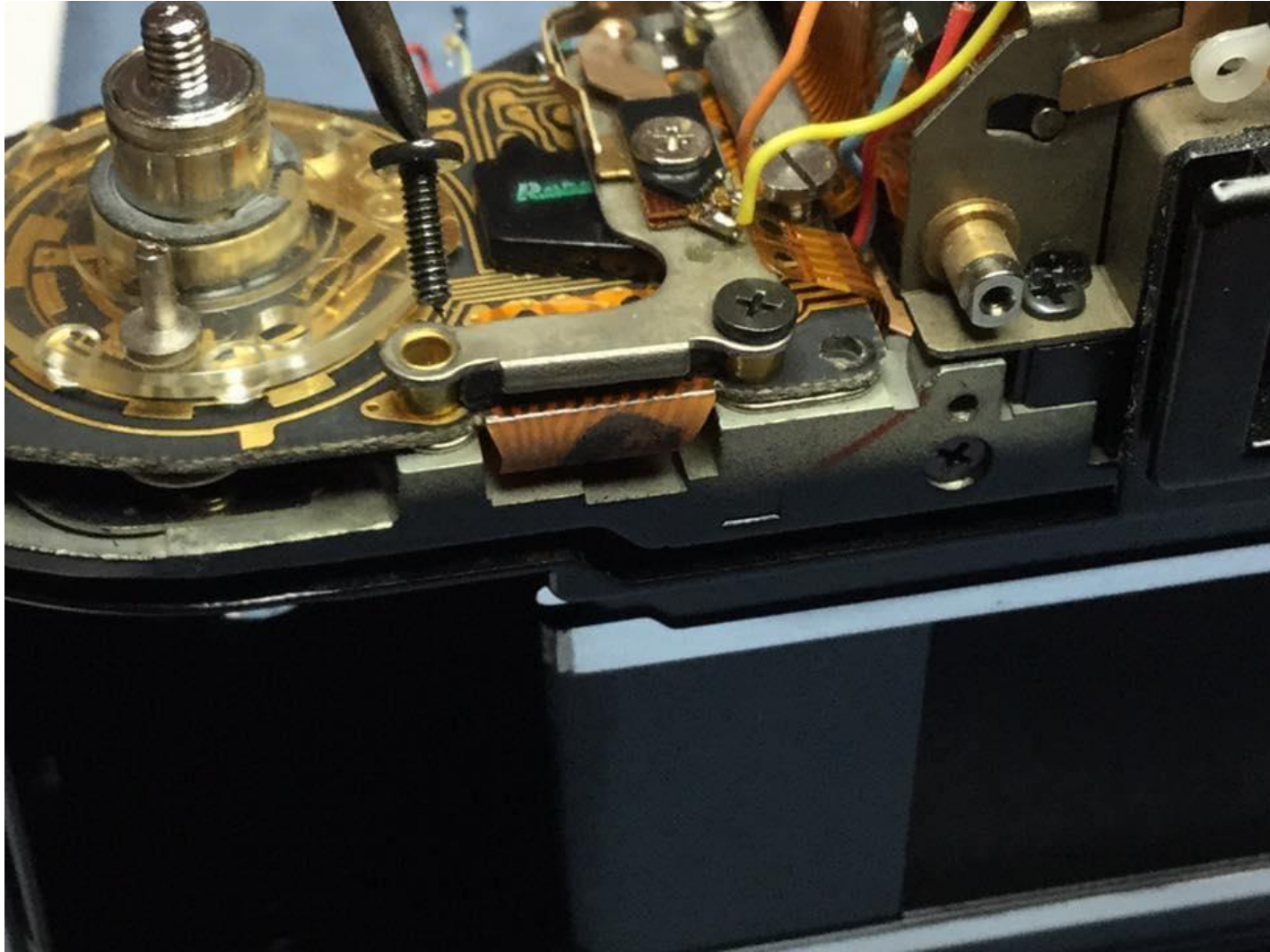
## Post #19

Remove the two screws holding the decoder-driver connector bar, lift off the bar and free the decoder-driver flex circuit.



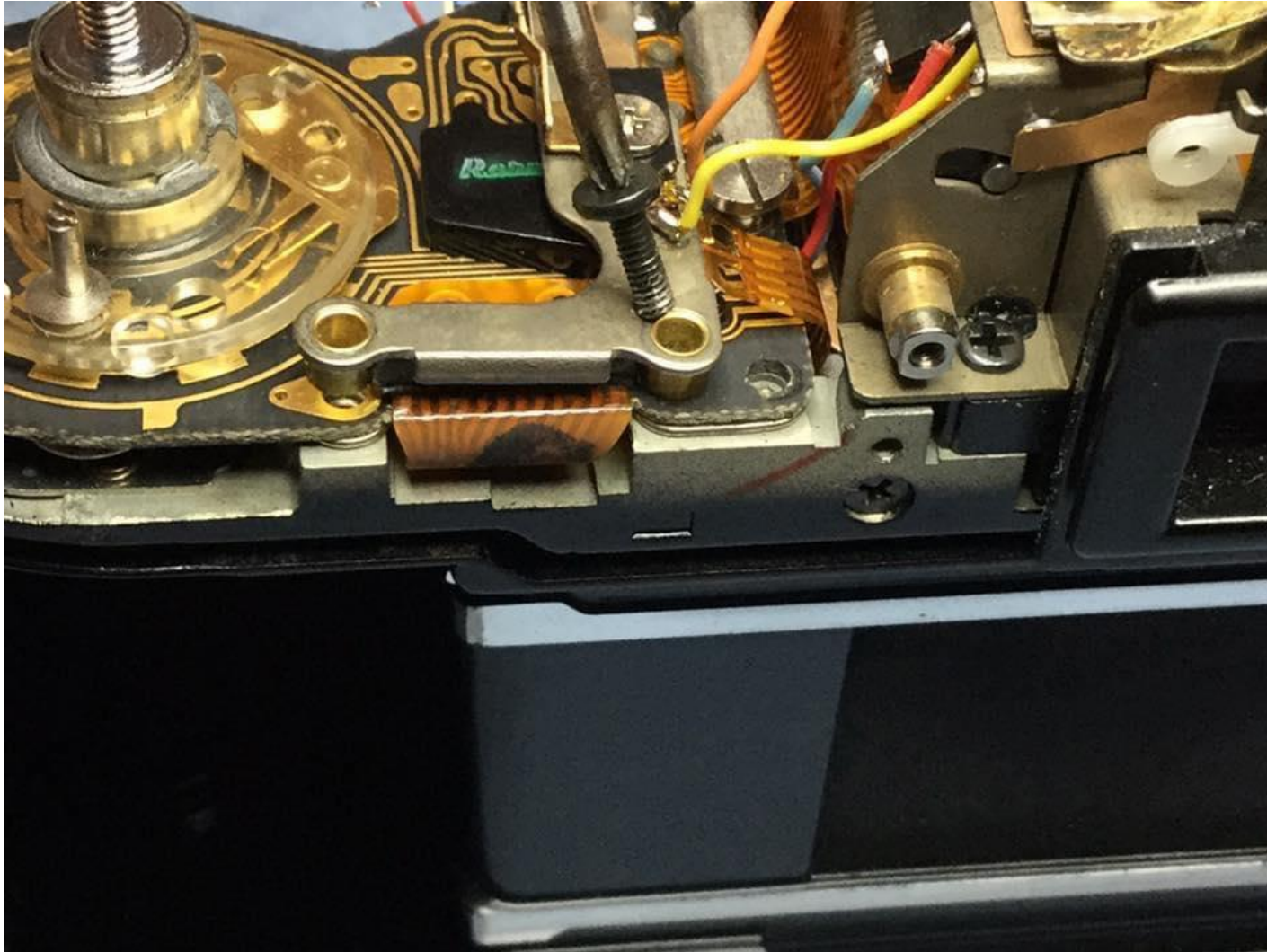
## Post #19

Remove the two screws holding the decoder-driver connector bar, lift off the bar and free the decoder-driver flex circuit.



## Post #19

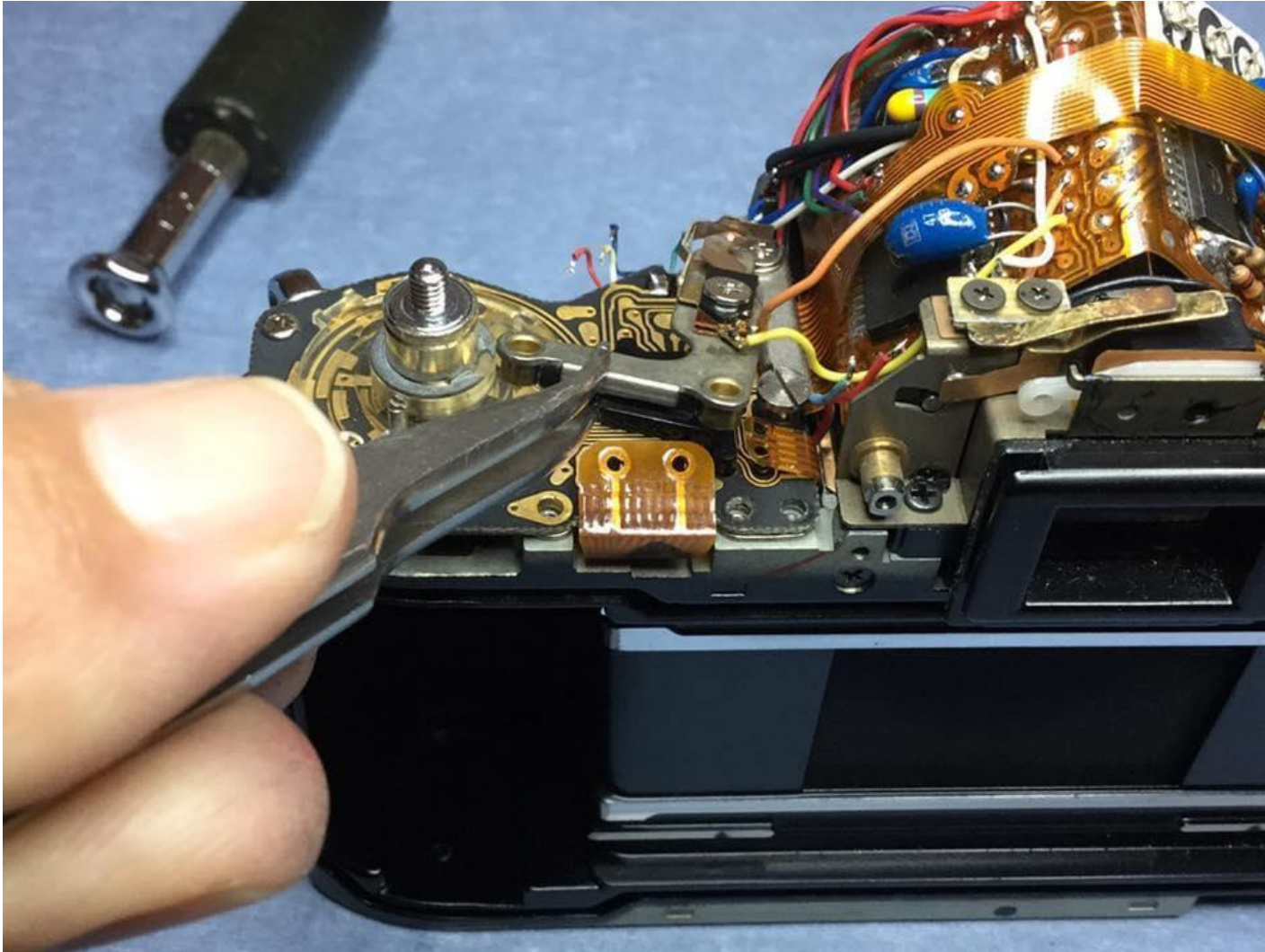
Remove the two screws holding the decoder-driver connector bar, lift off the bar and free the decoder-driver flex circuit.





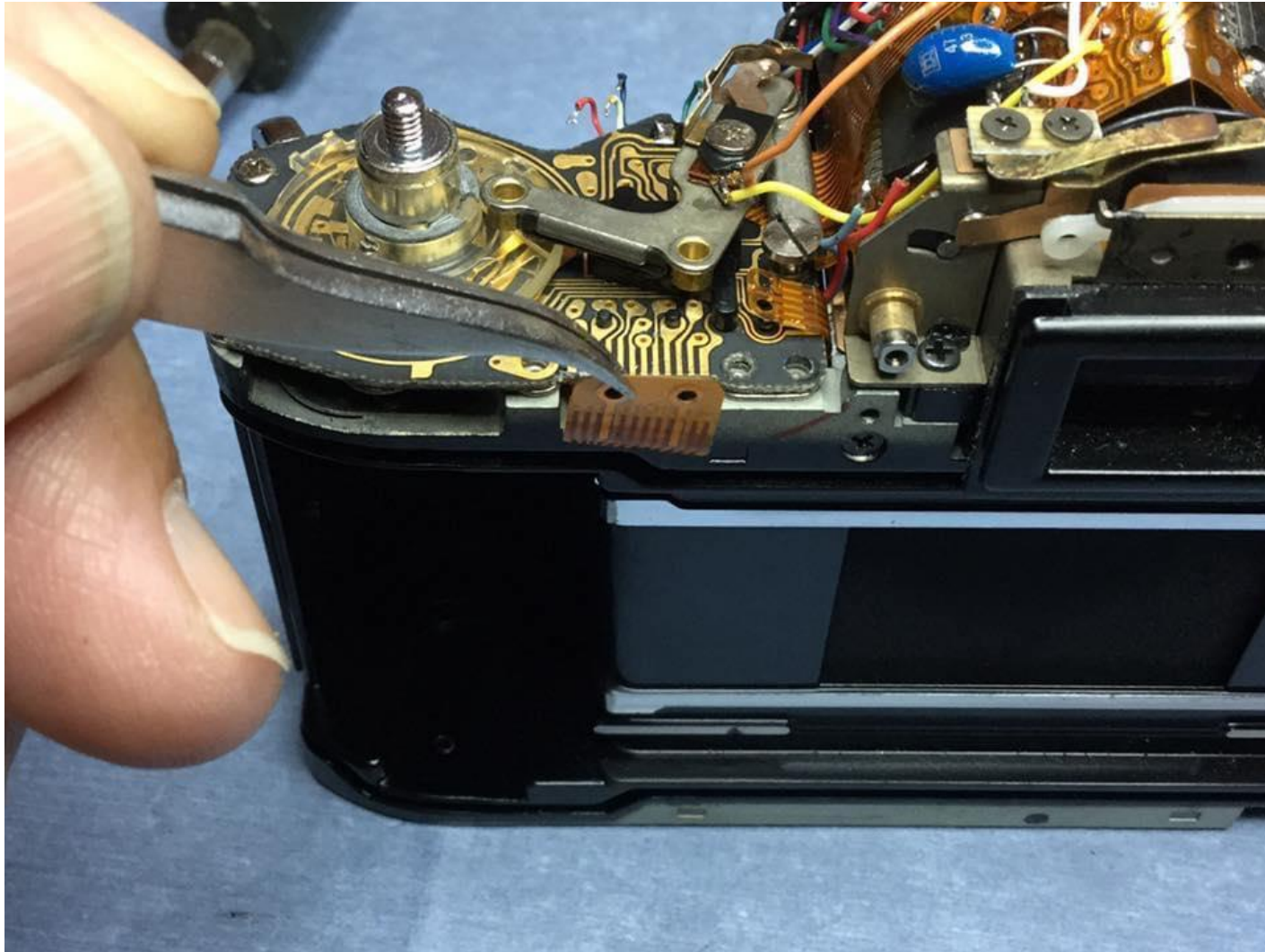
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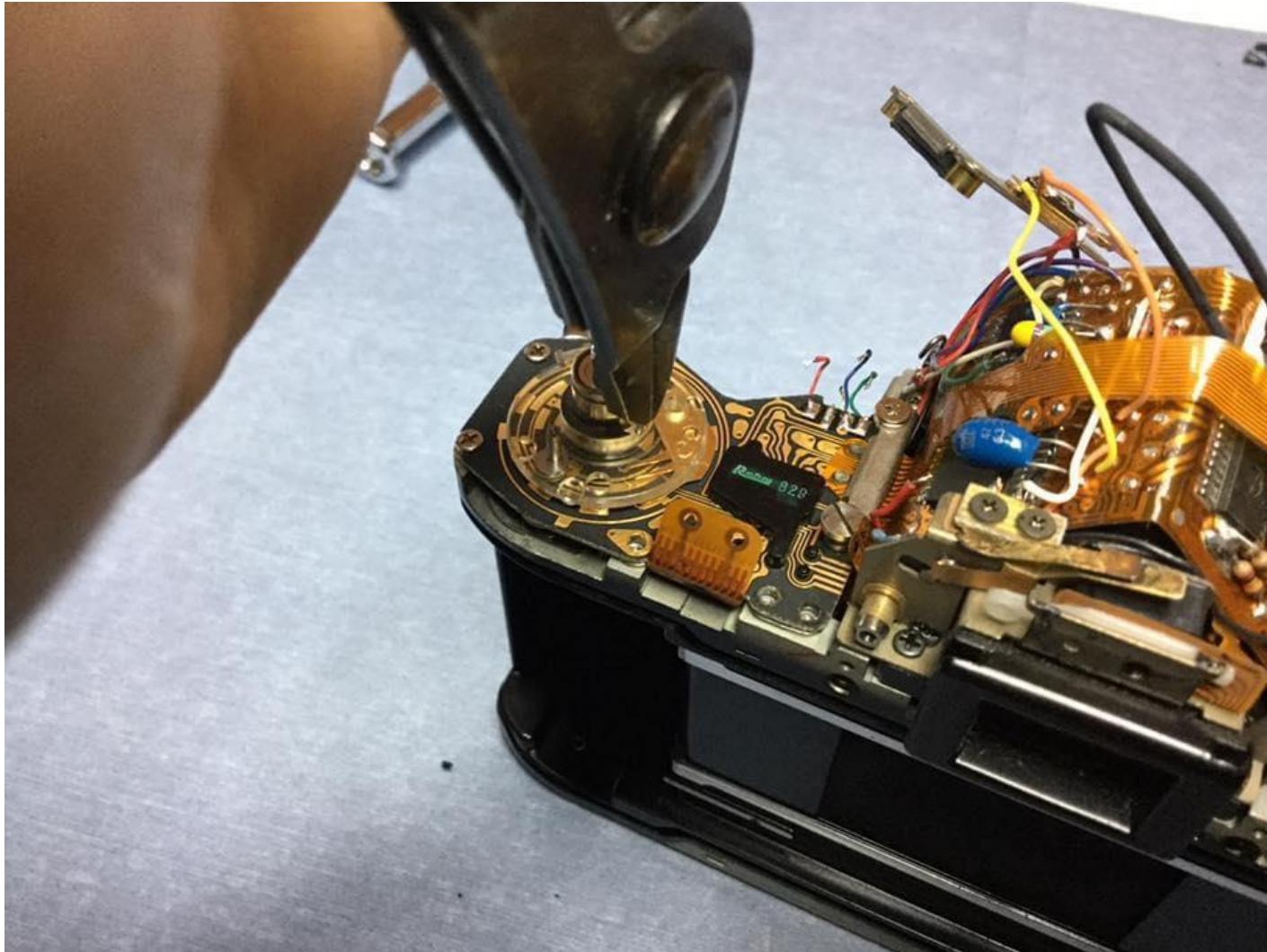




## Post #20

Remove the snap ring holding the S.V. (speed value) brush contact assembly, lift off the contact assembly, remove the two white cross-point screws holding the board and remove the loose support bar underneath the board.

Free the board by lifting it slightly - this is to allow the disconnected flex circuits to pass under the board without damaging them - be careful not to damage these flex connectors!

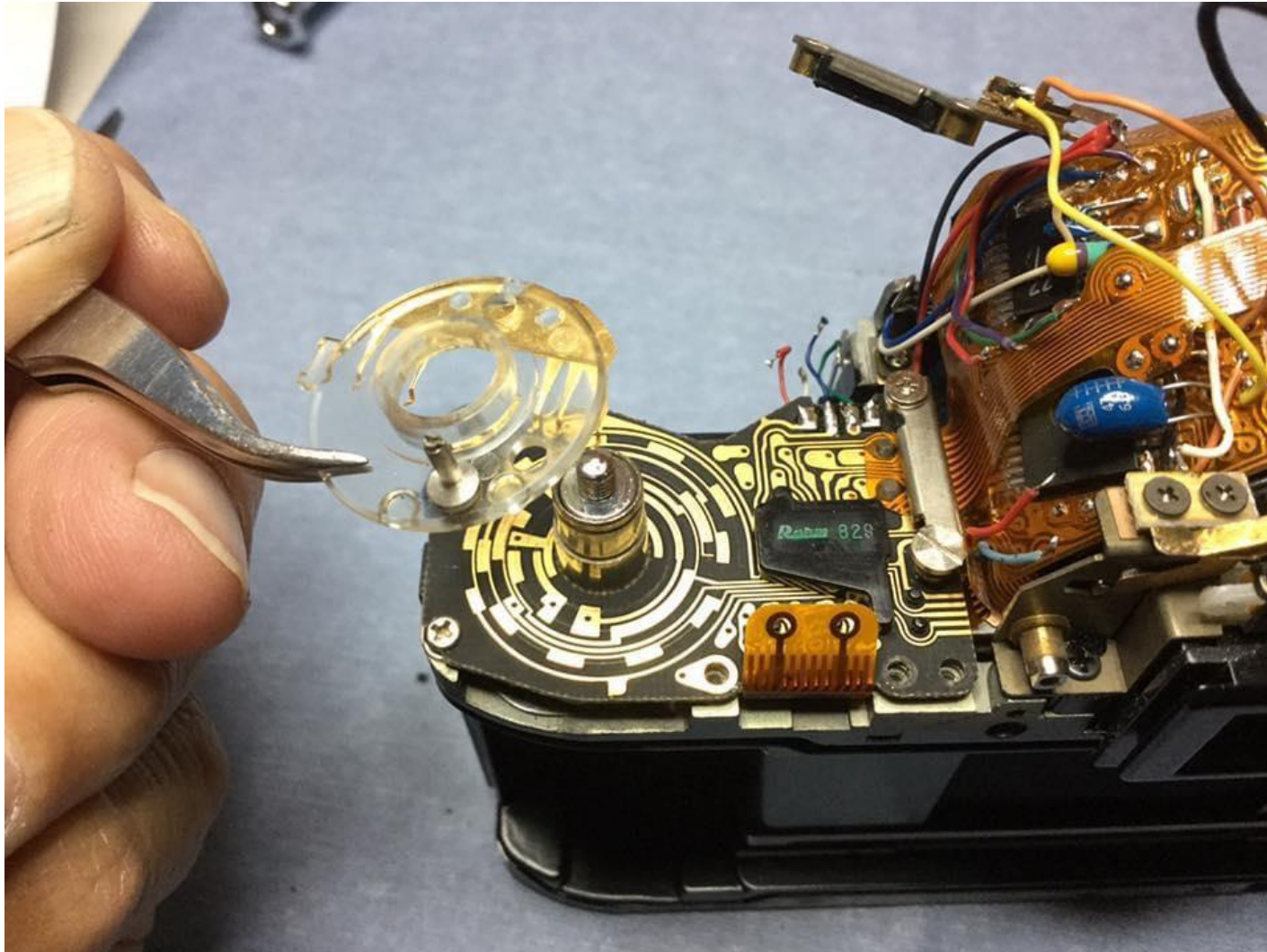




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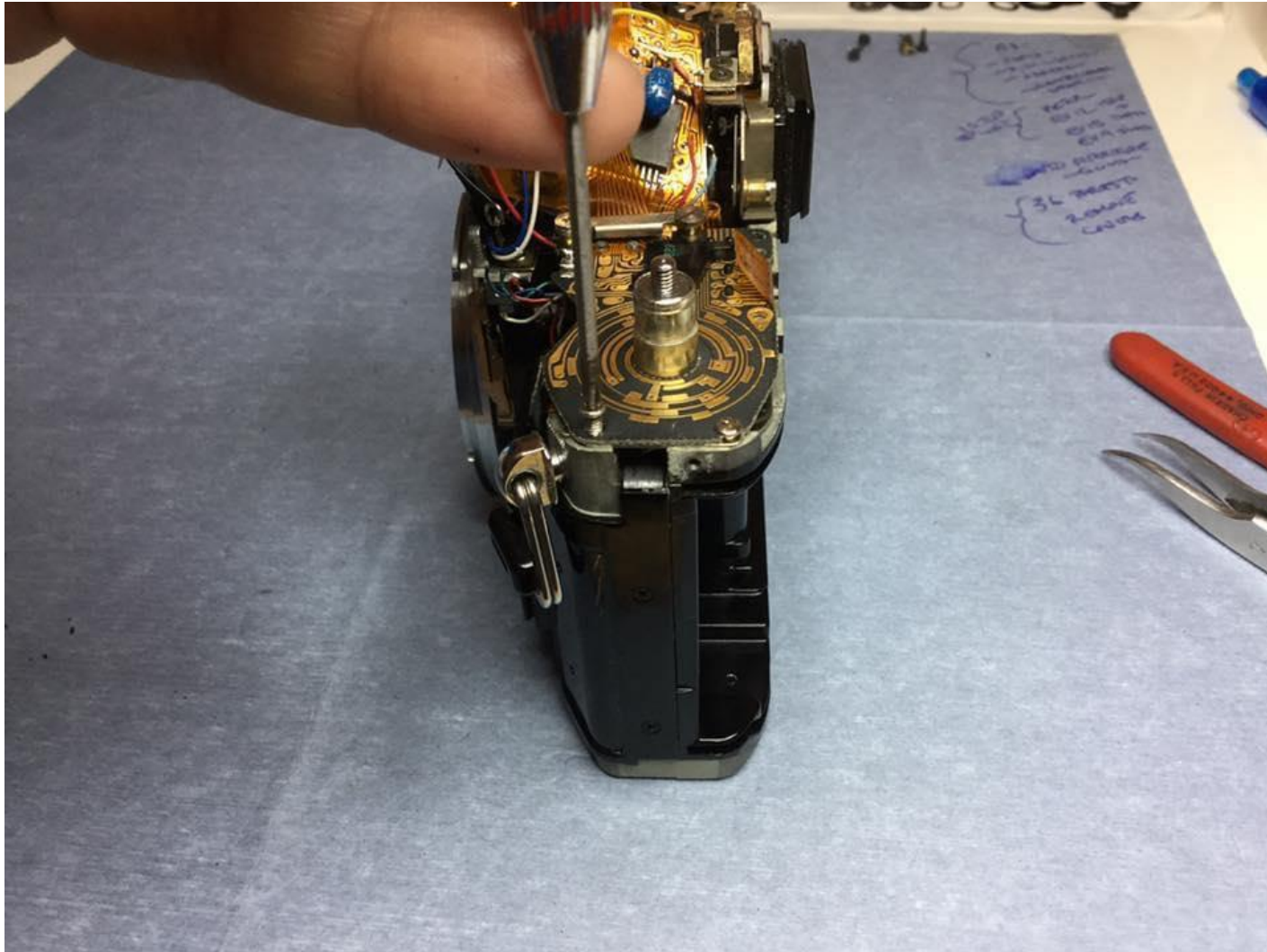
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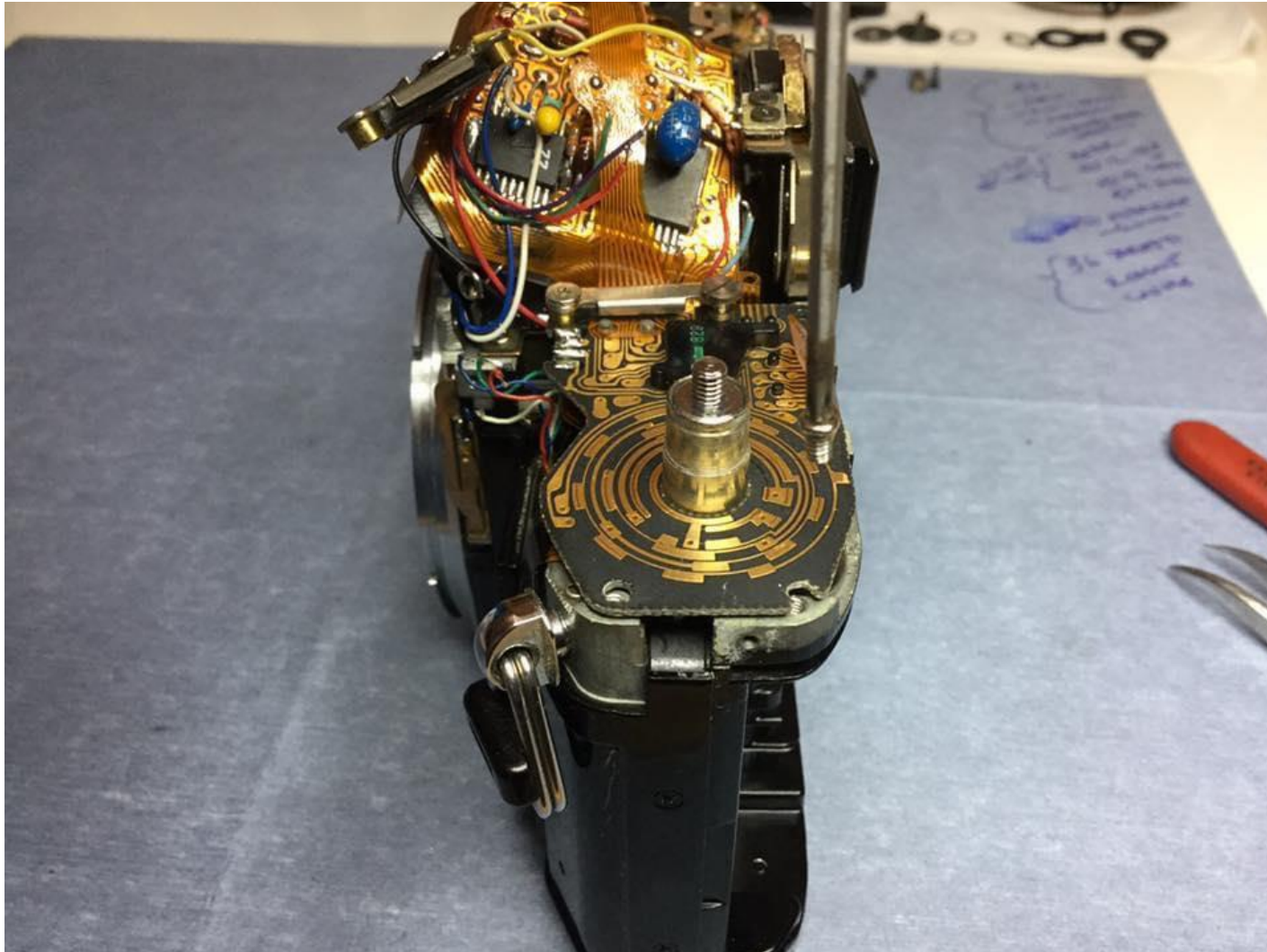




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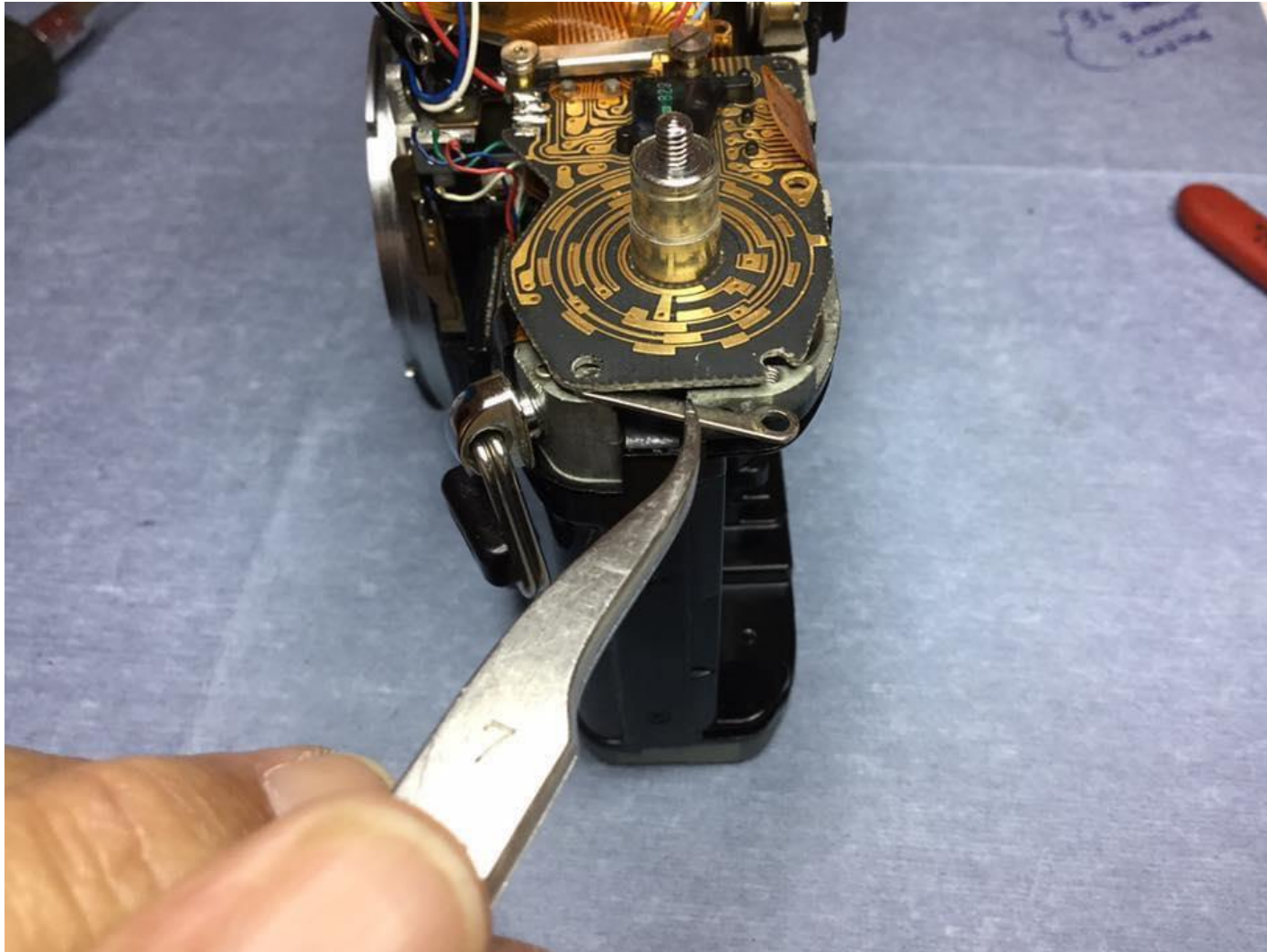




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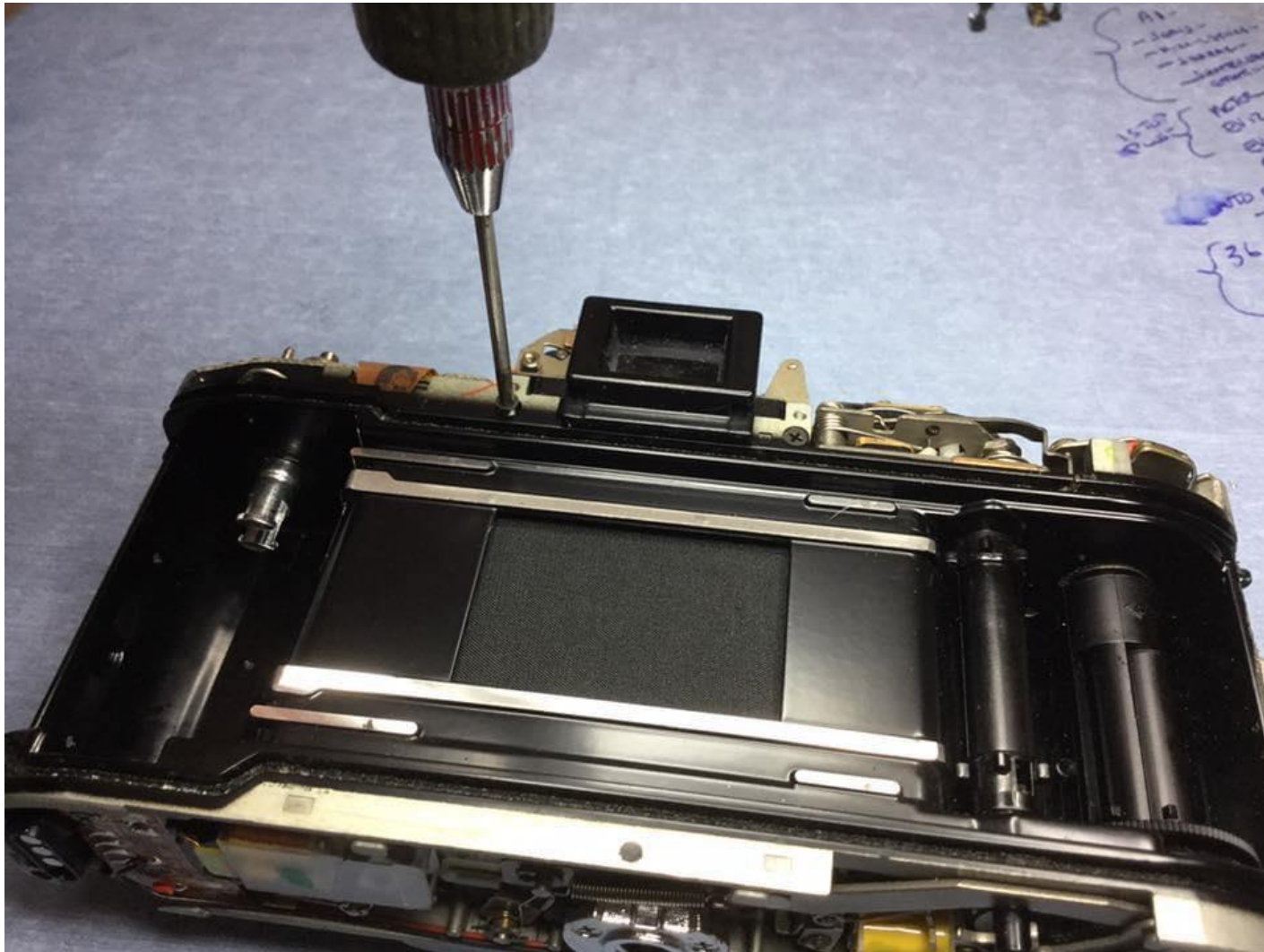
Free the board by lifting it slightly - this is to allow the disconnected flex circuits to pass under the board without damaging them - be careful not to damage these flex connectors!



# Post #21

Remove the two screws next to the eyepiece, the five front plate screws.

Lift out the mirror assembly passing the flex connectors through carefully - don't risk damage by not being gentle and careful!



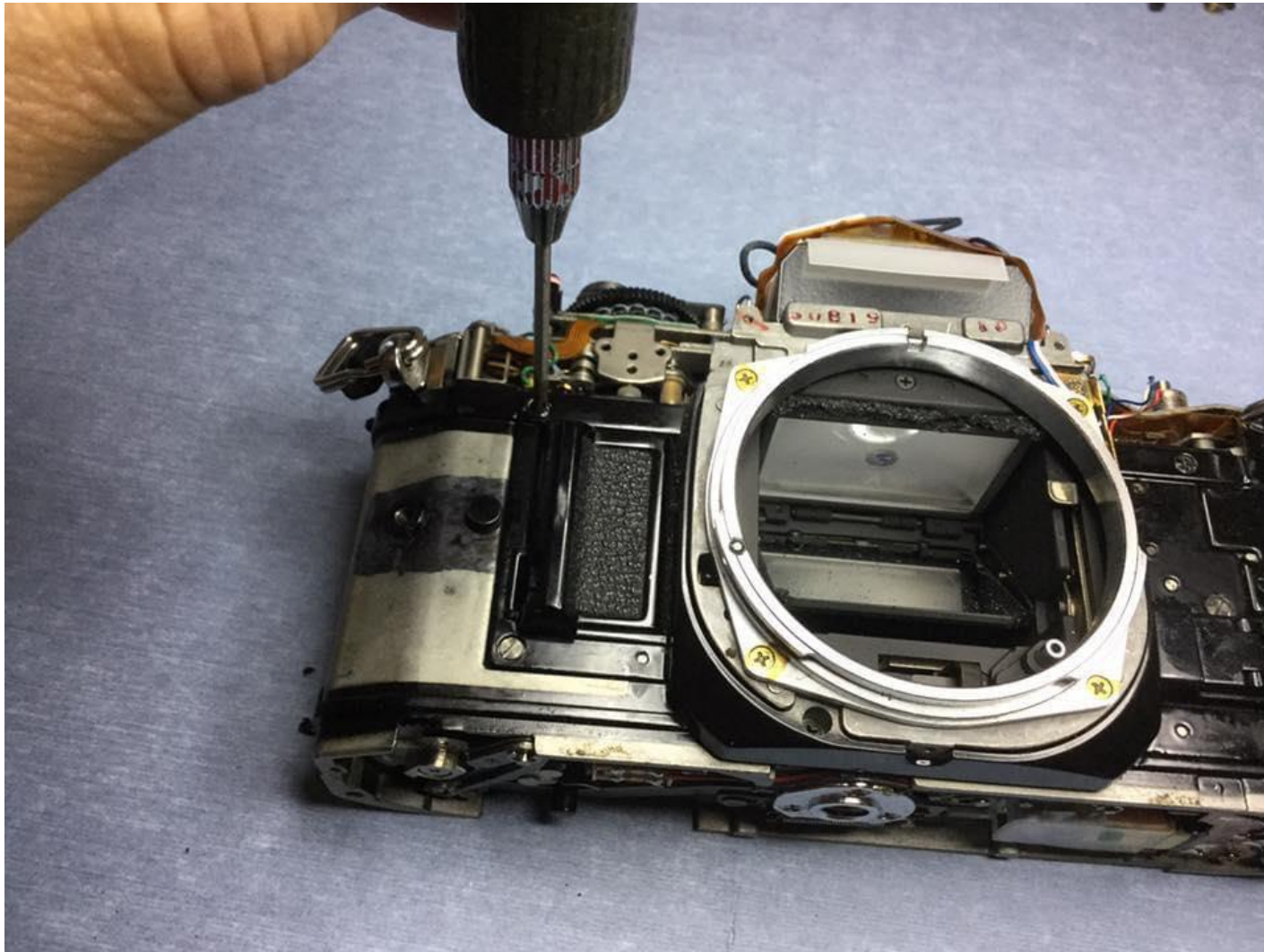




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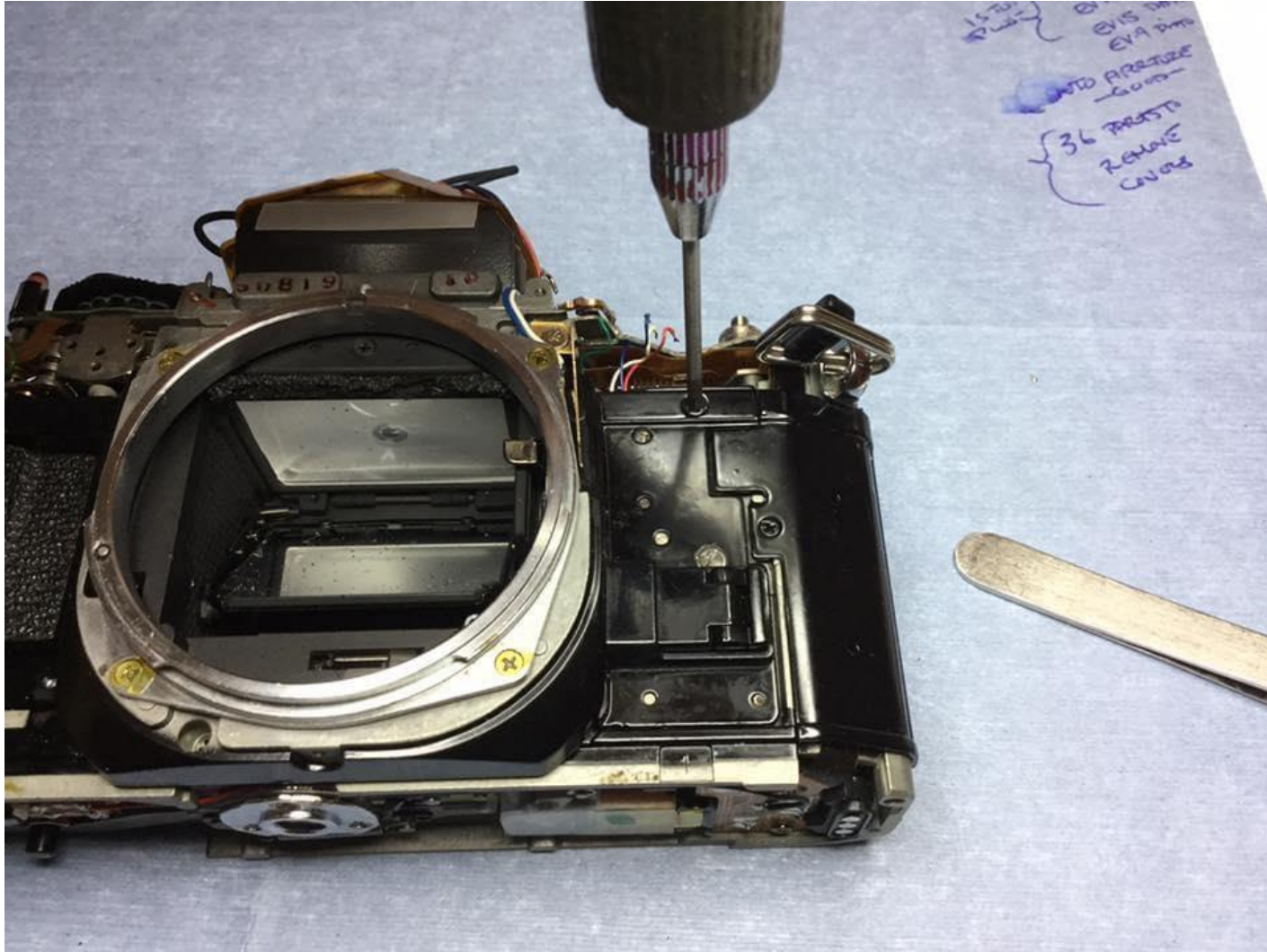
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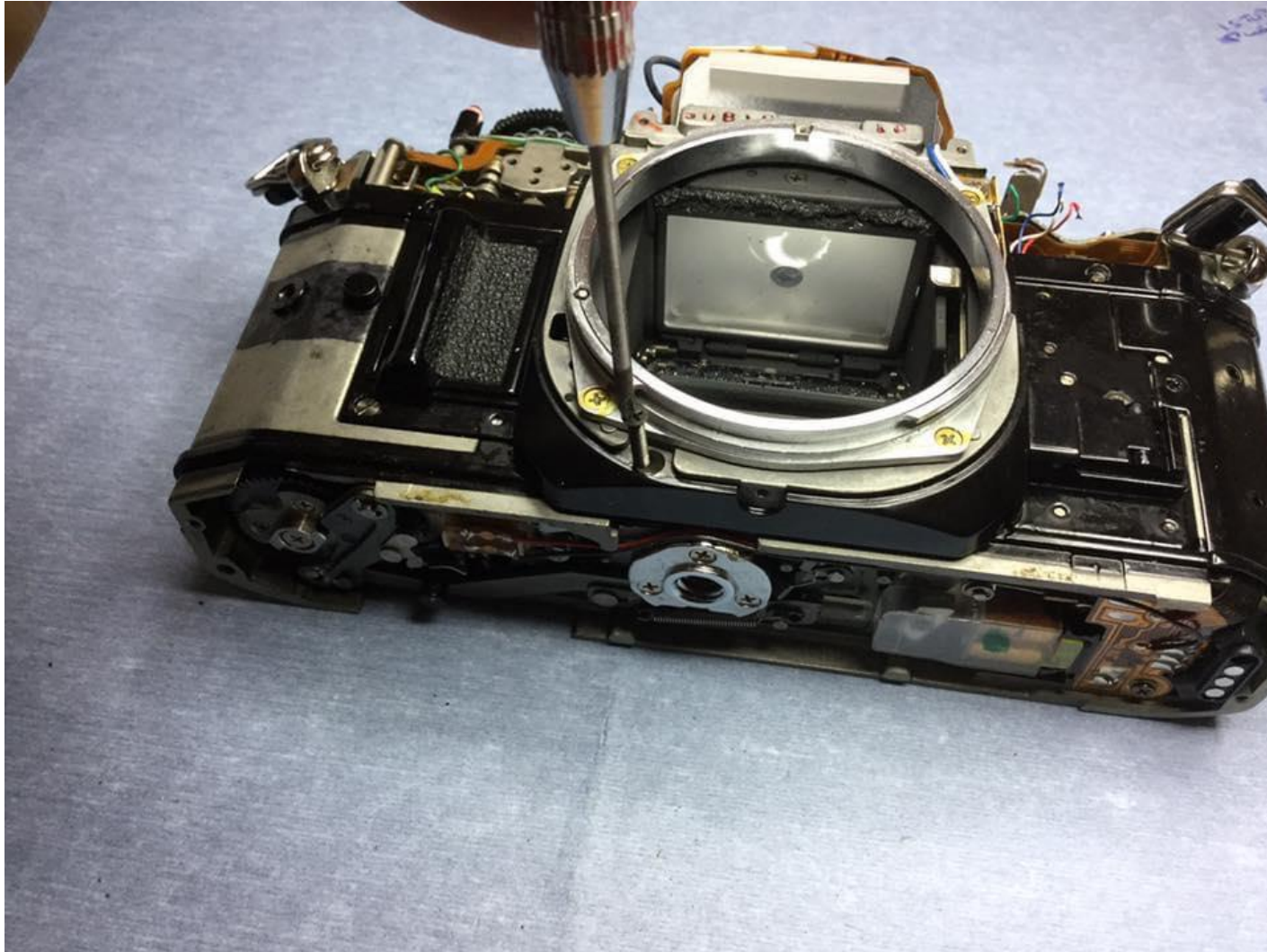




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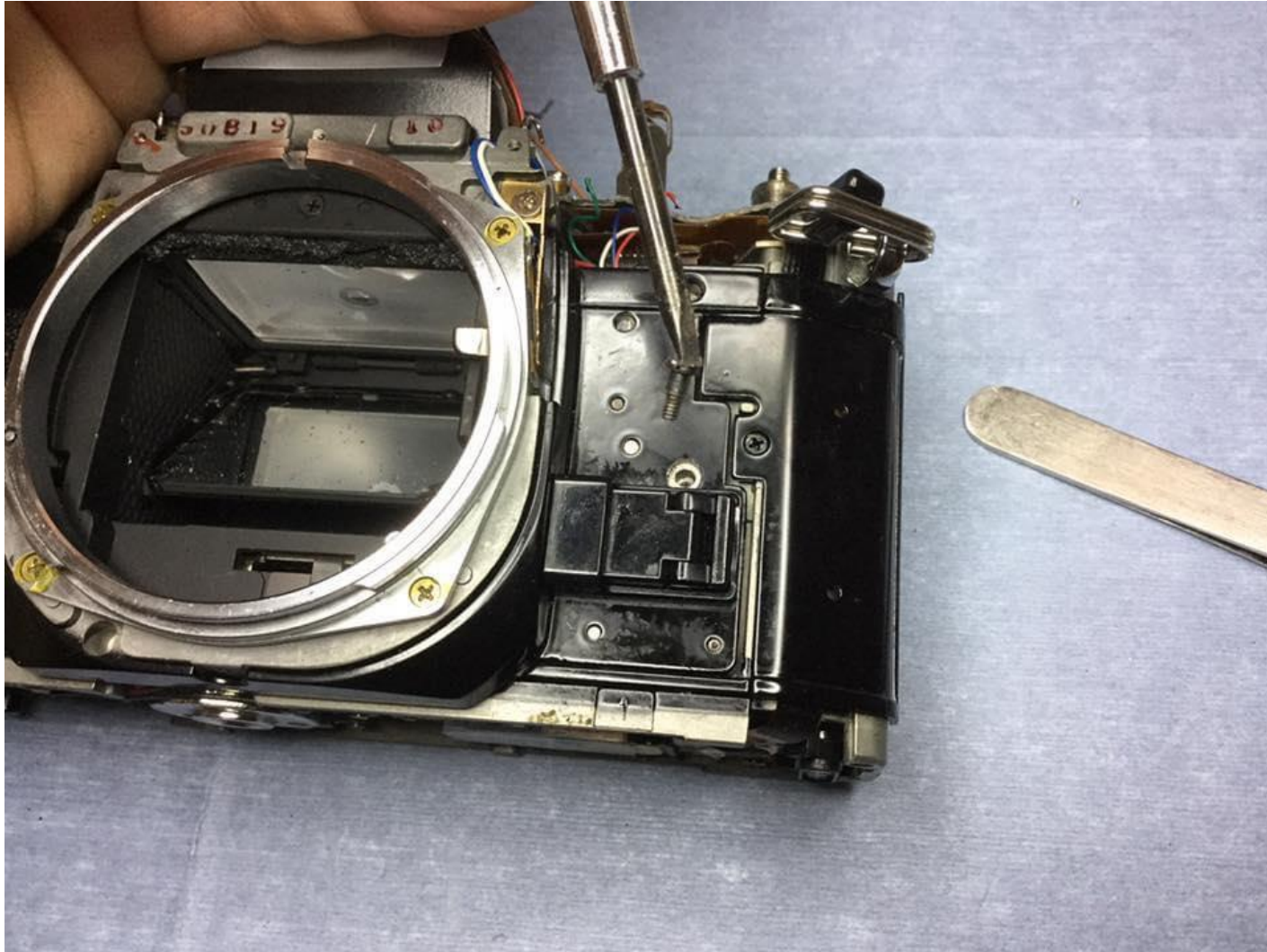




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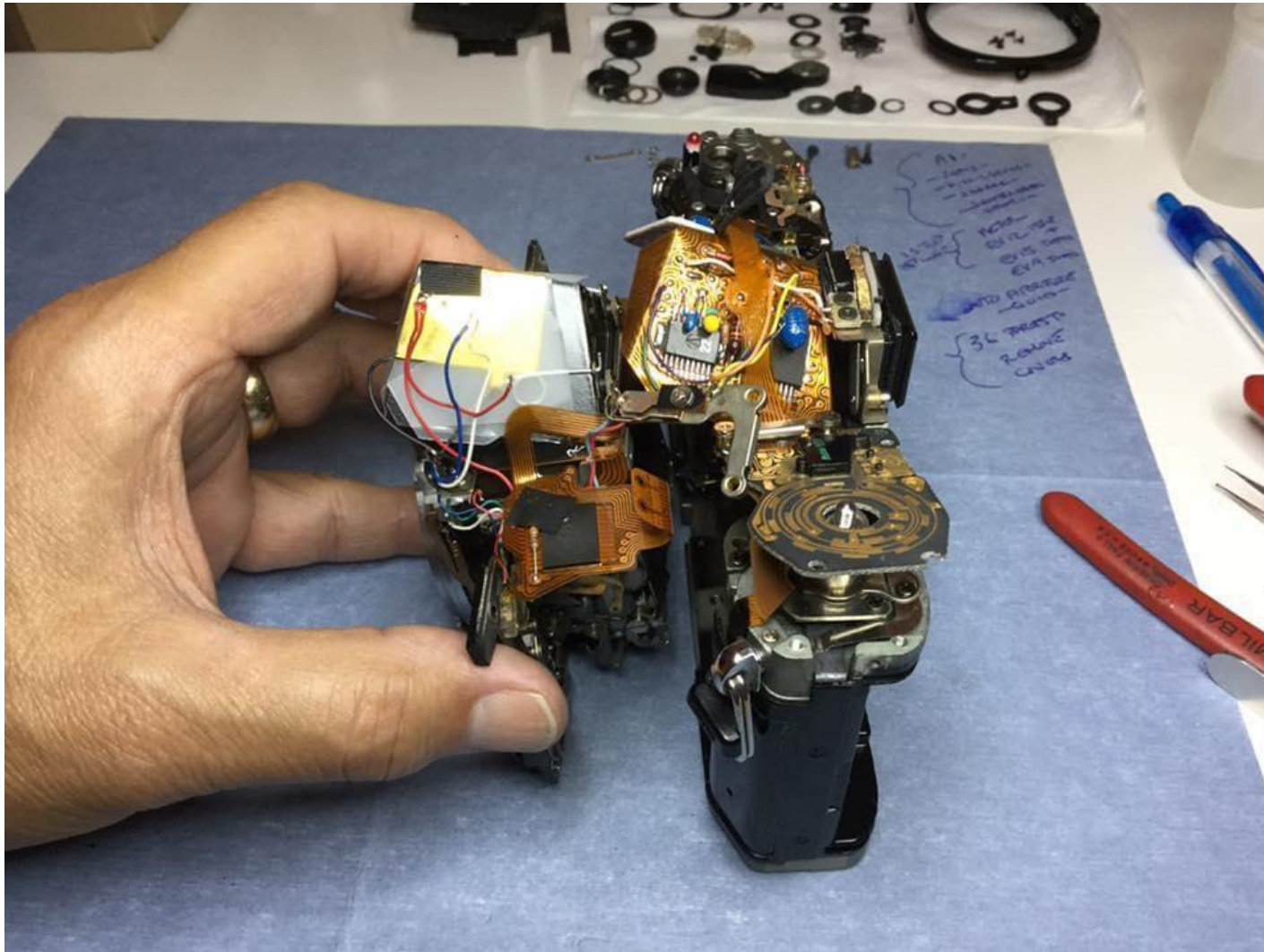
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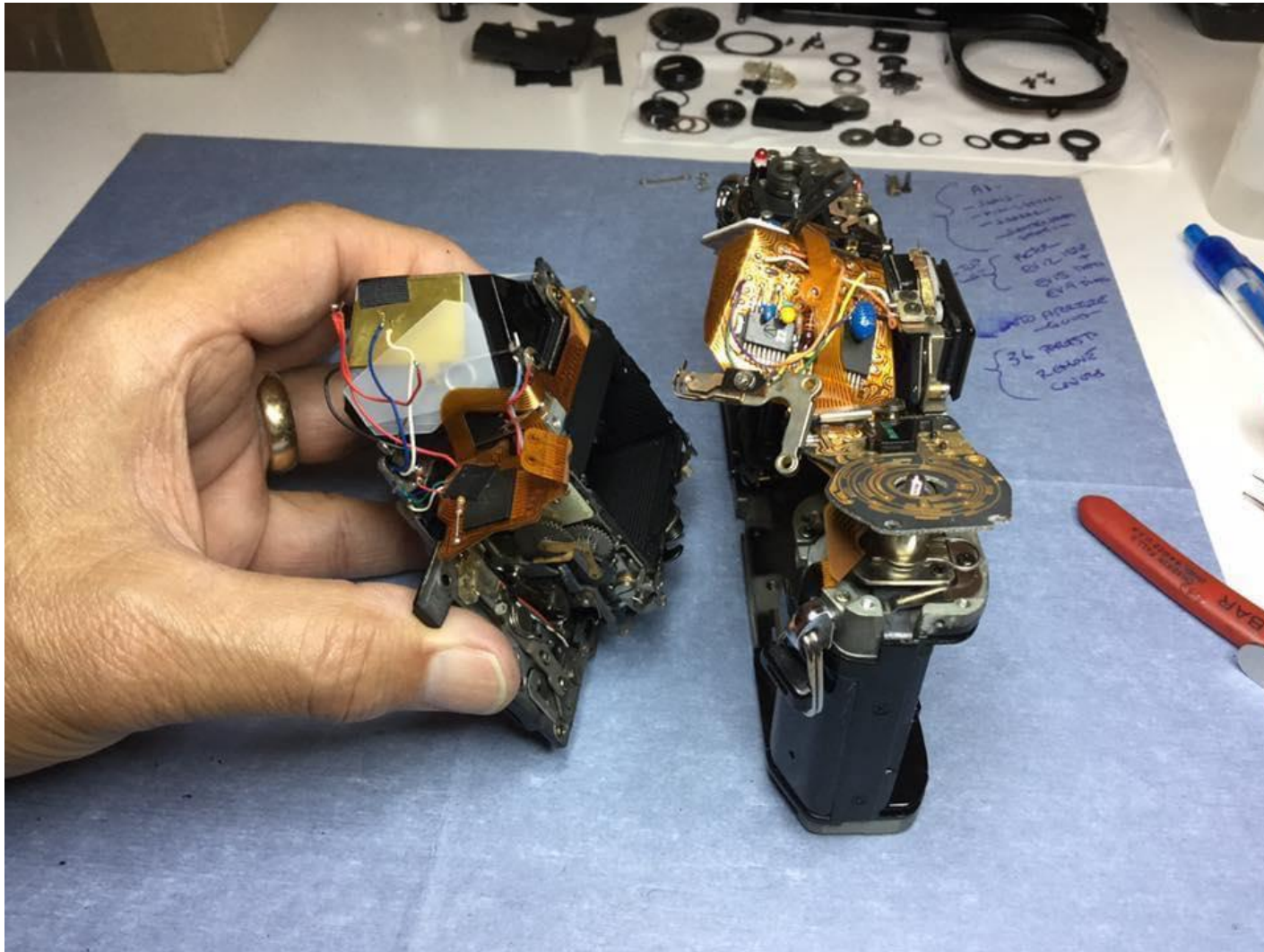




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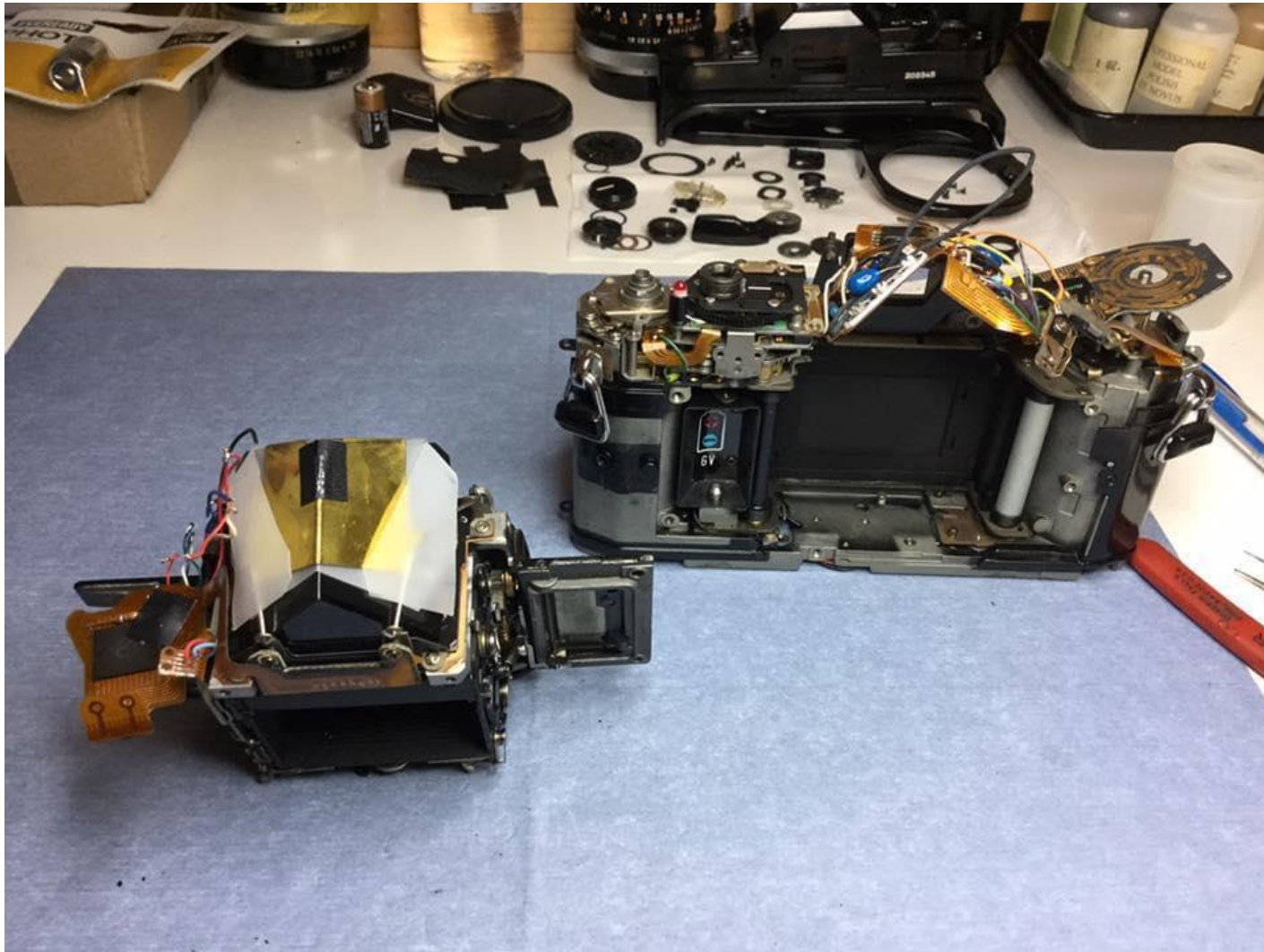




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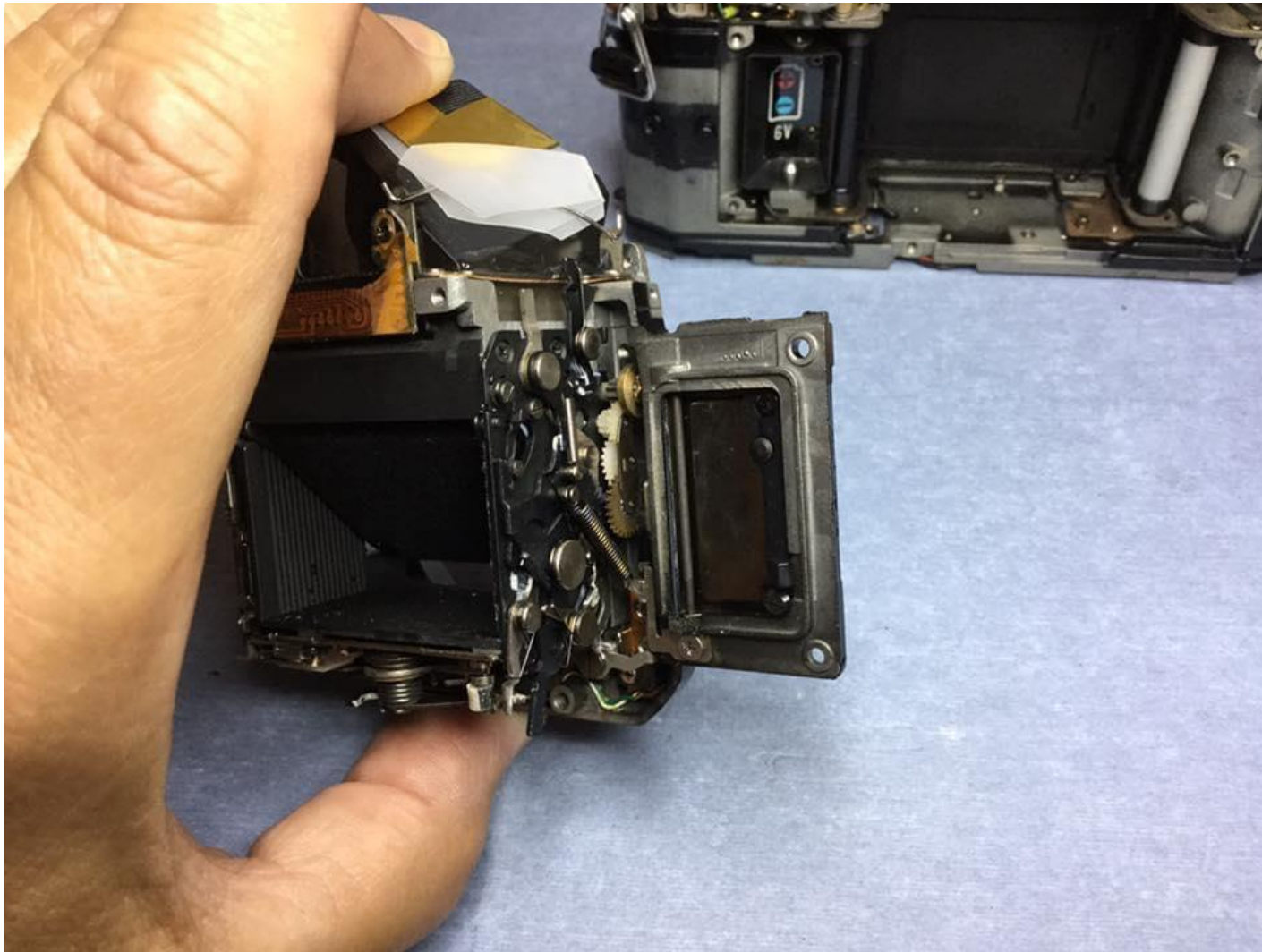
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## Post #22

Inspect the mirror assembly looking for any damage - here shown in these photos I found the mirror bumper broken - this part is actually not necessary for the mirror unit to function properly but I'll find an appropriate nylon bushing to fit it upon reassembly.

It would seem the loose broken part of the bumper was intermittently locking up the mirror (the mirror tests good with the broken part removed).

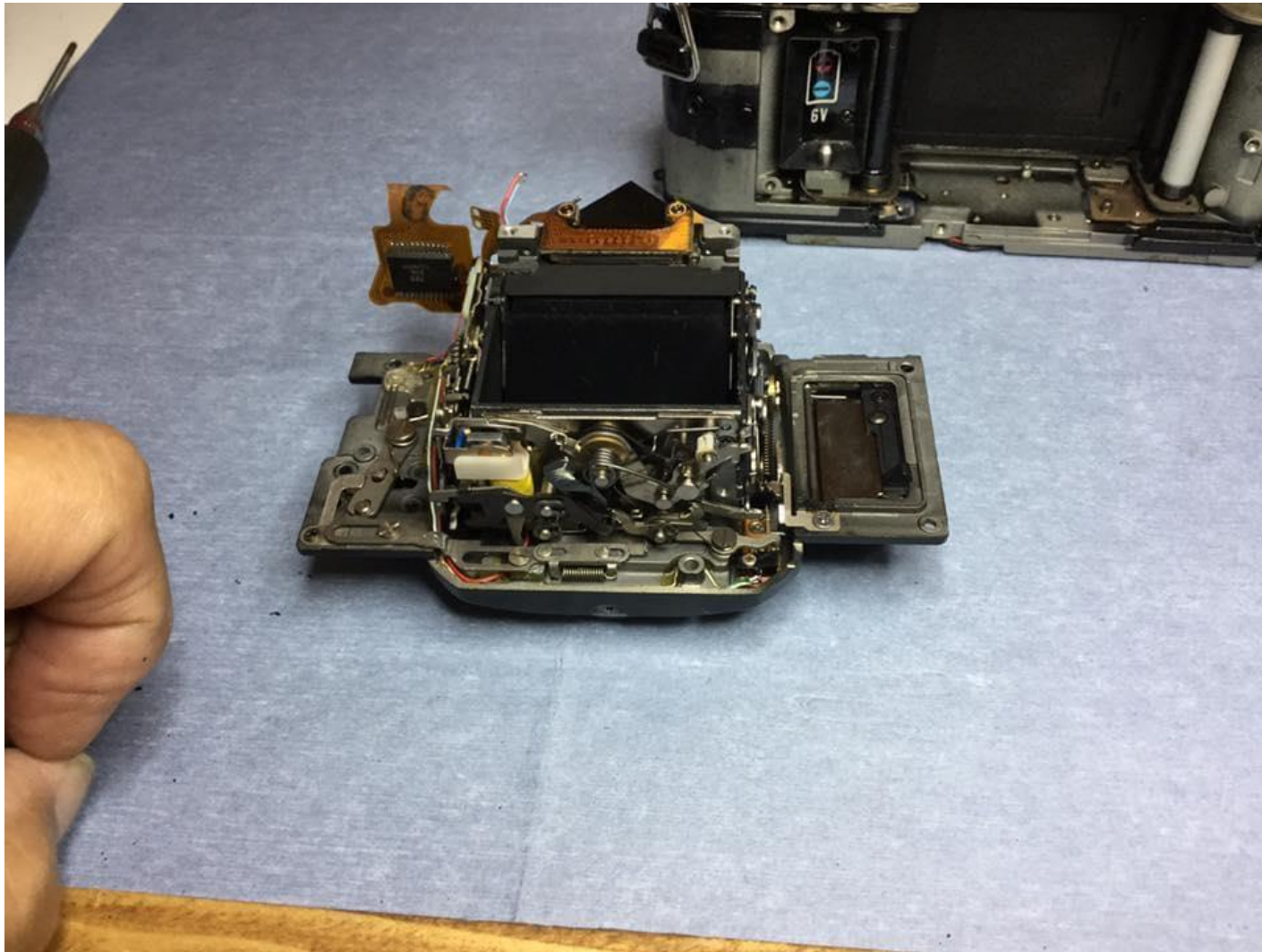




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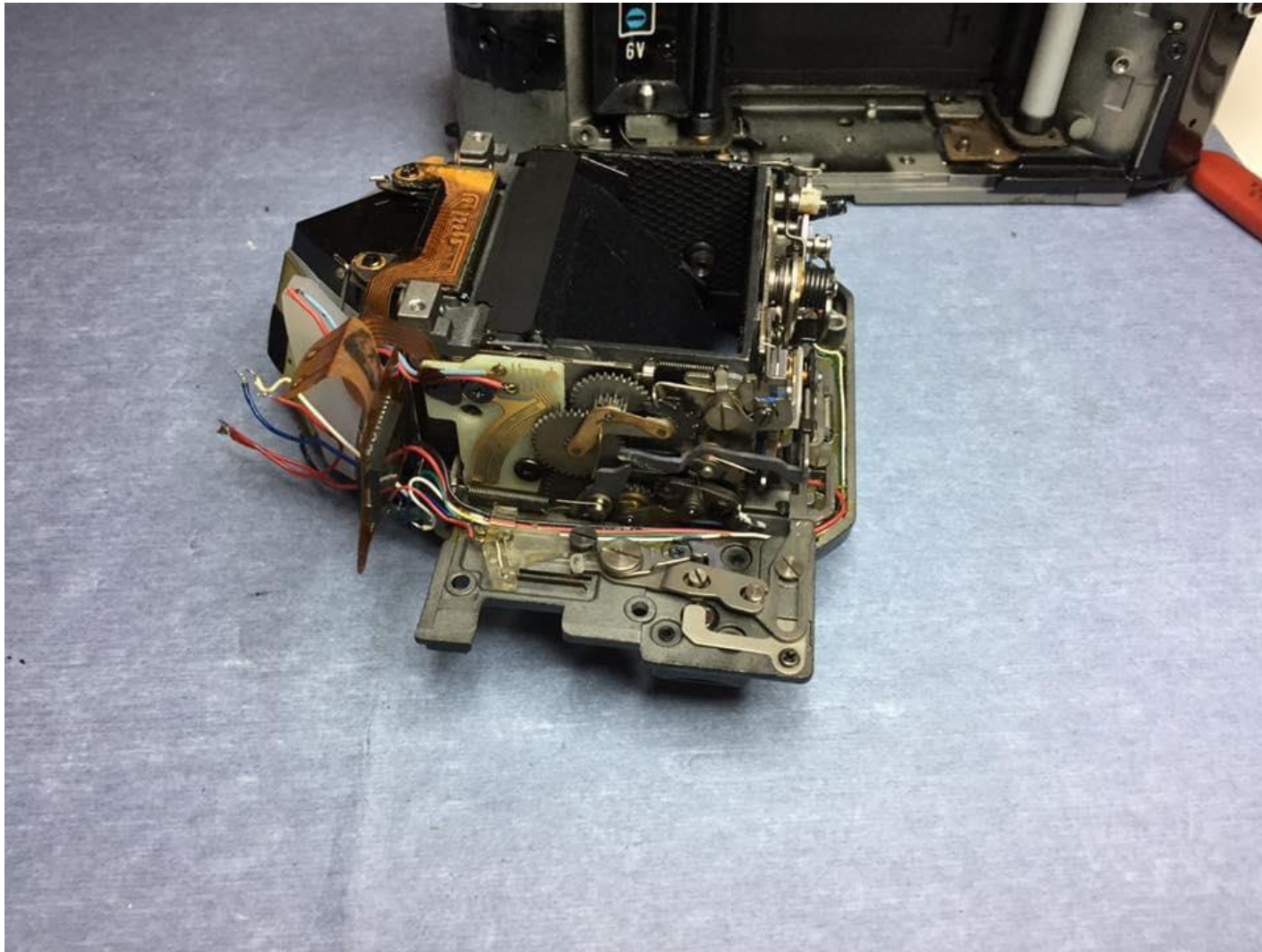




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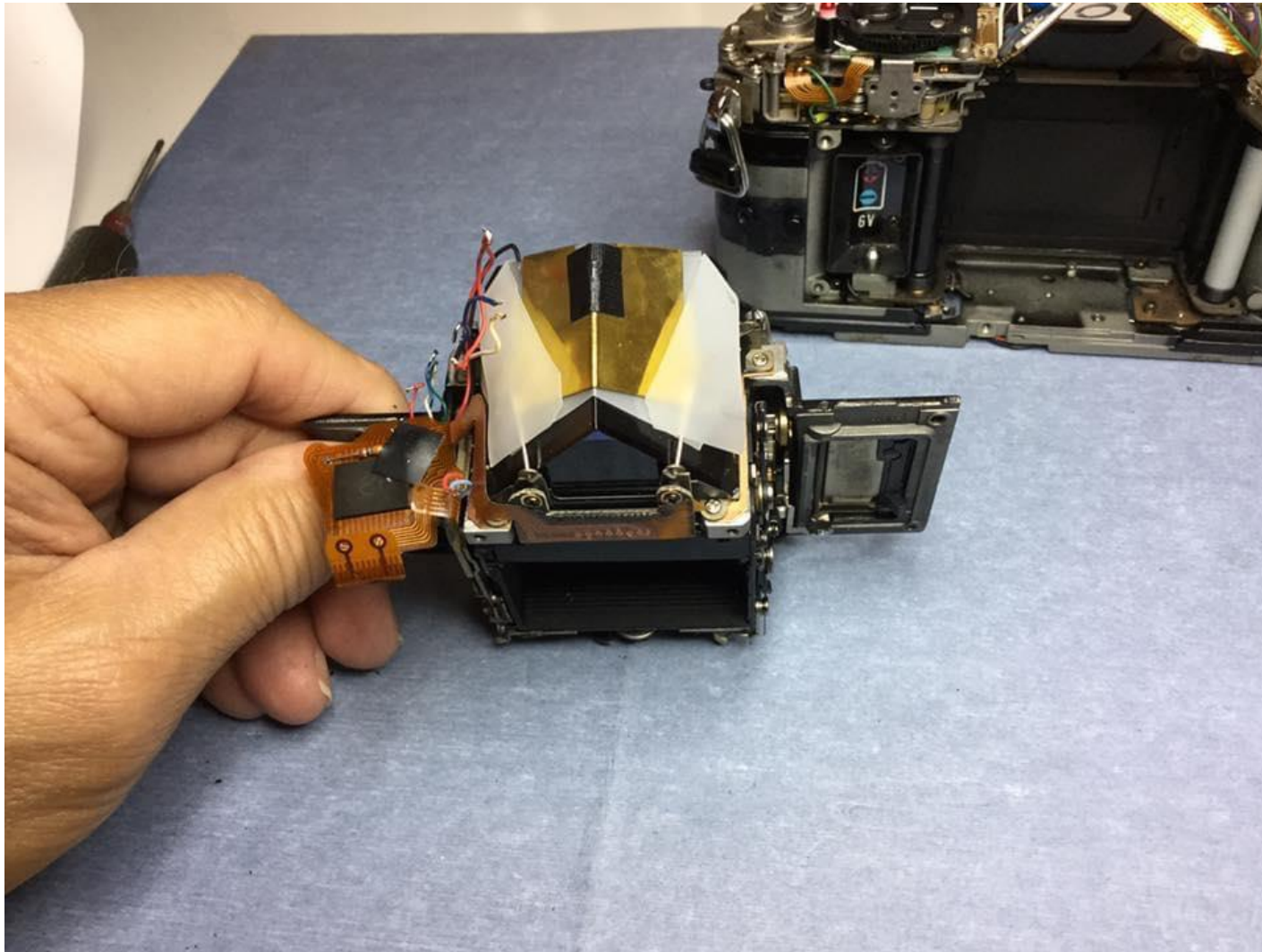
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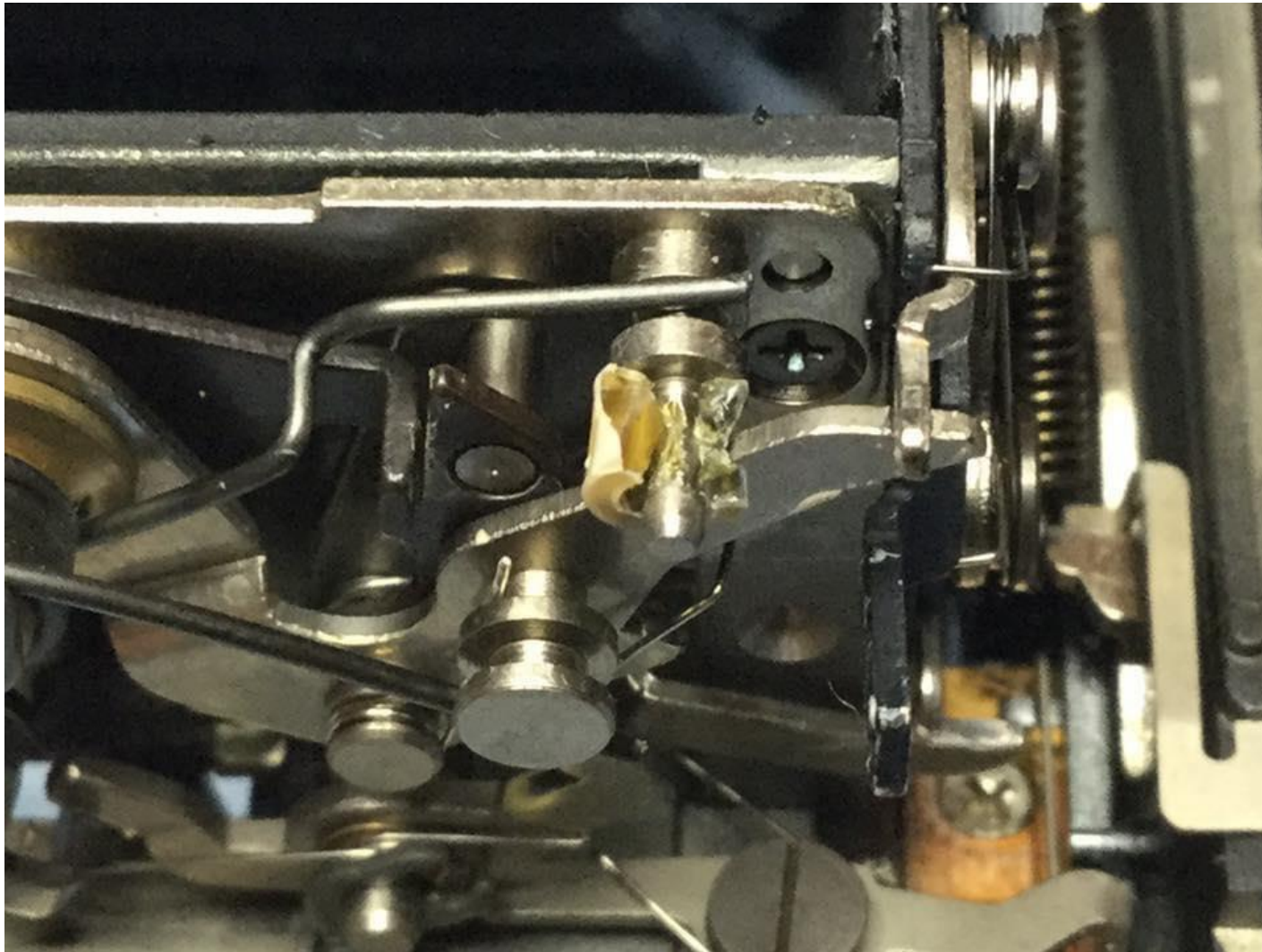




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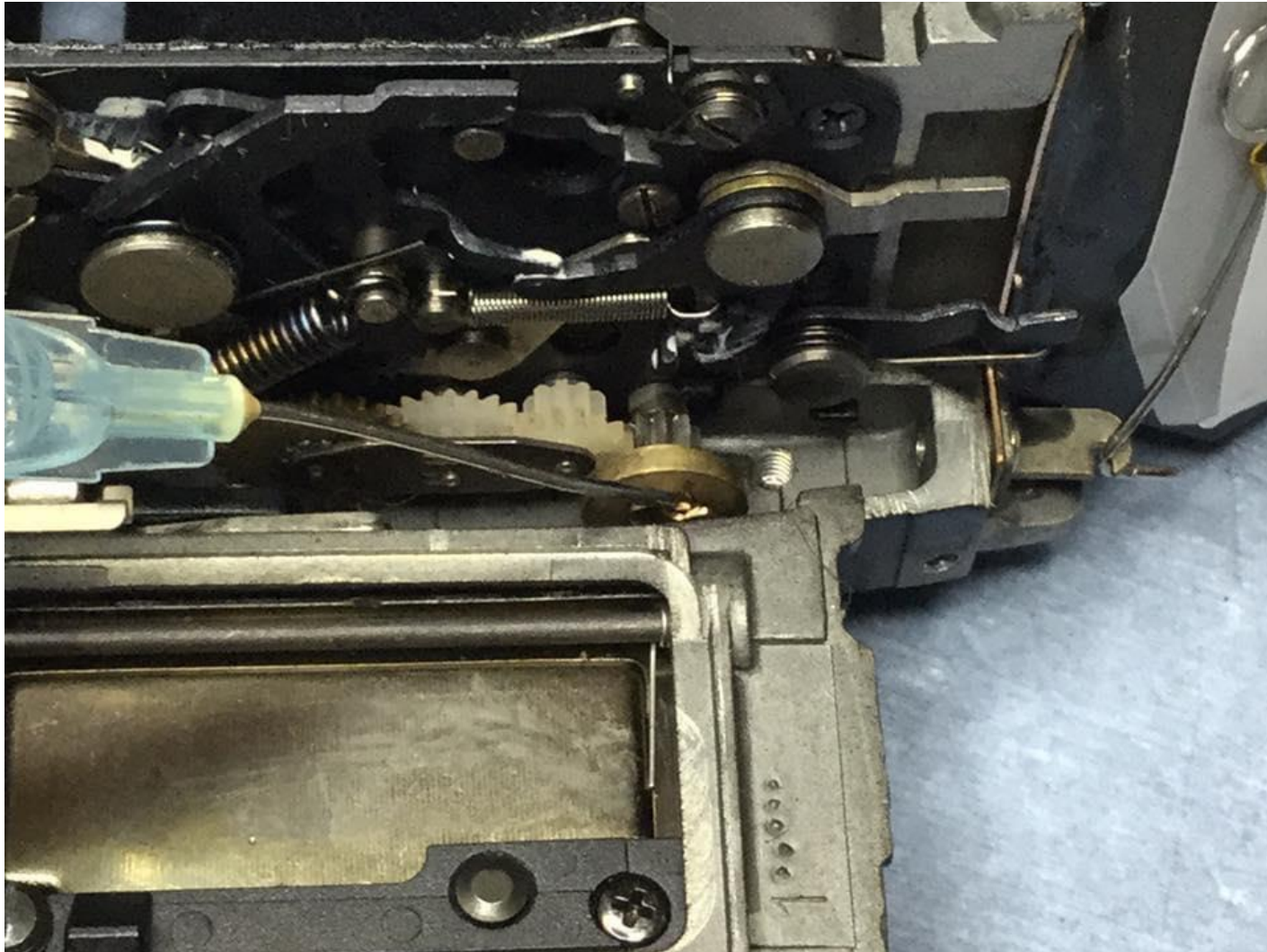




## Post #24

Lubricate the mirror governor to cure the "squeak" - yes ... the famous shutter squeal or squeak, it's actually the mirror governor squeaking (the mirror lifts to release the shutter first curtain).

After letting the lubricant to work it's way into the bearings (I let it sit a few hours or overnight), then test it again and begin the reassembly process whereupon the contacts and magnets will be cleaned and tested.

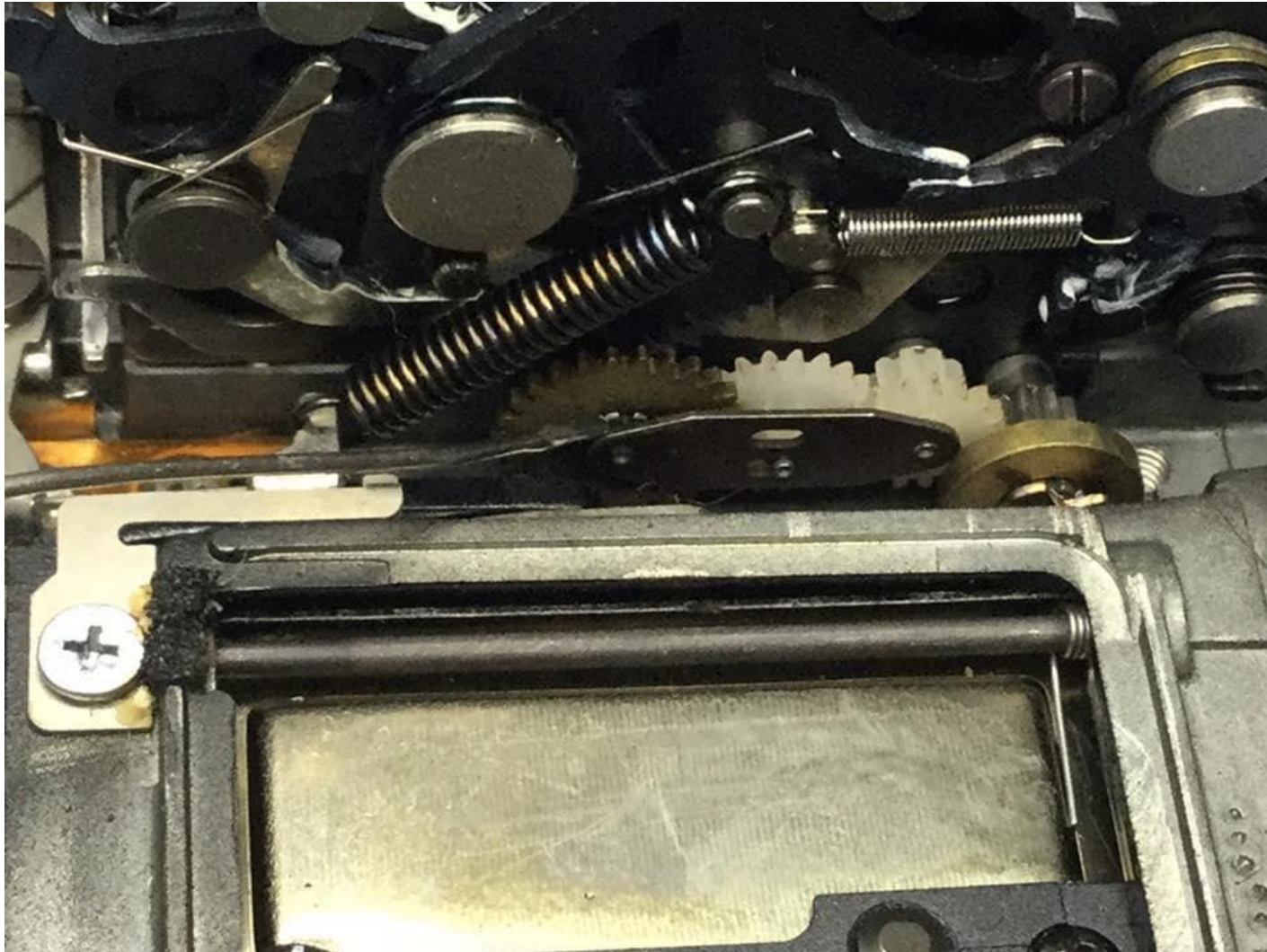




## Post #24

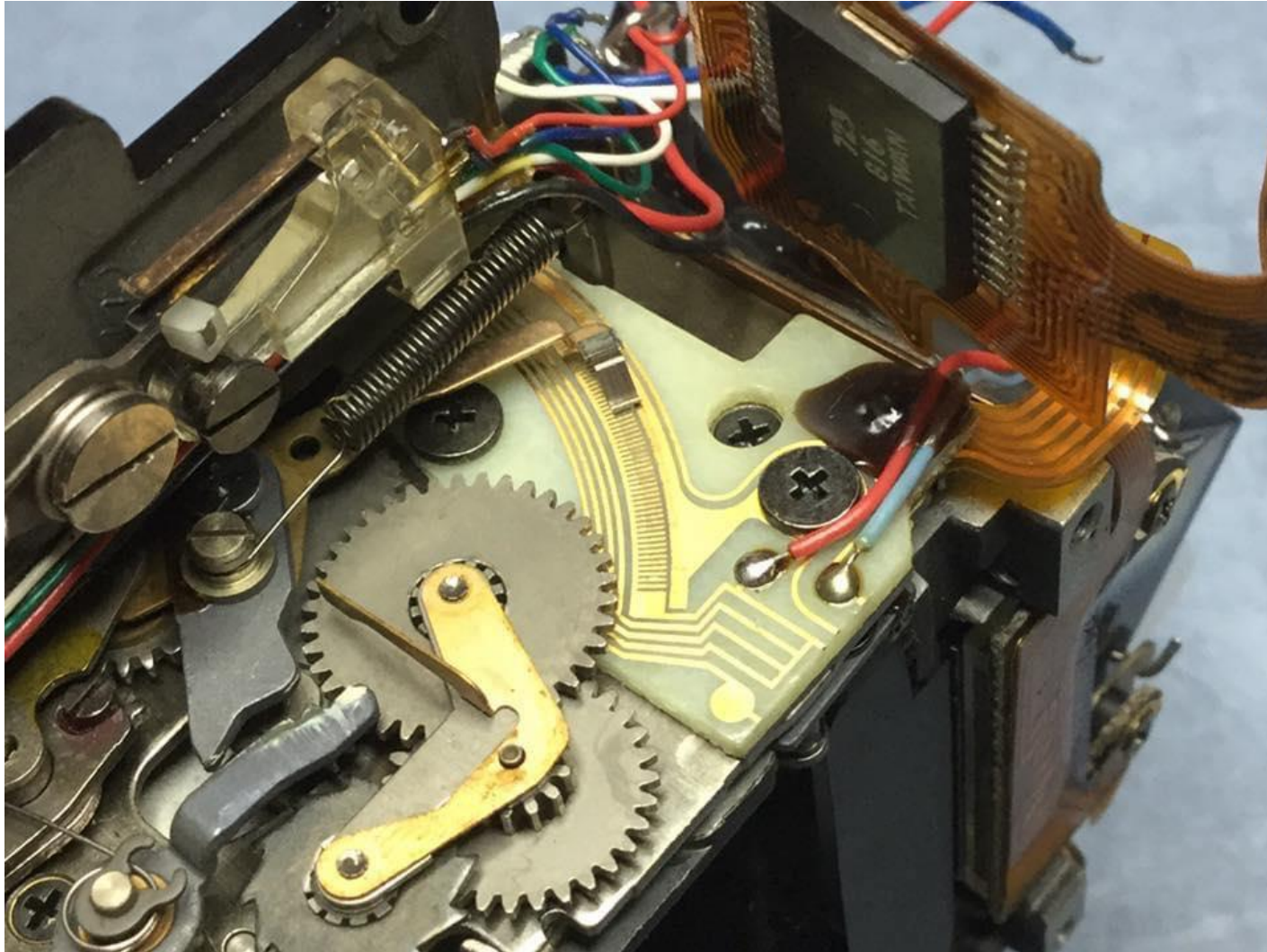
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## Post #25

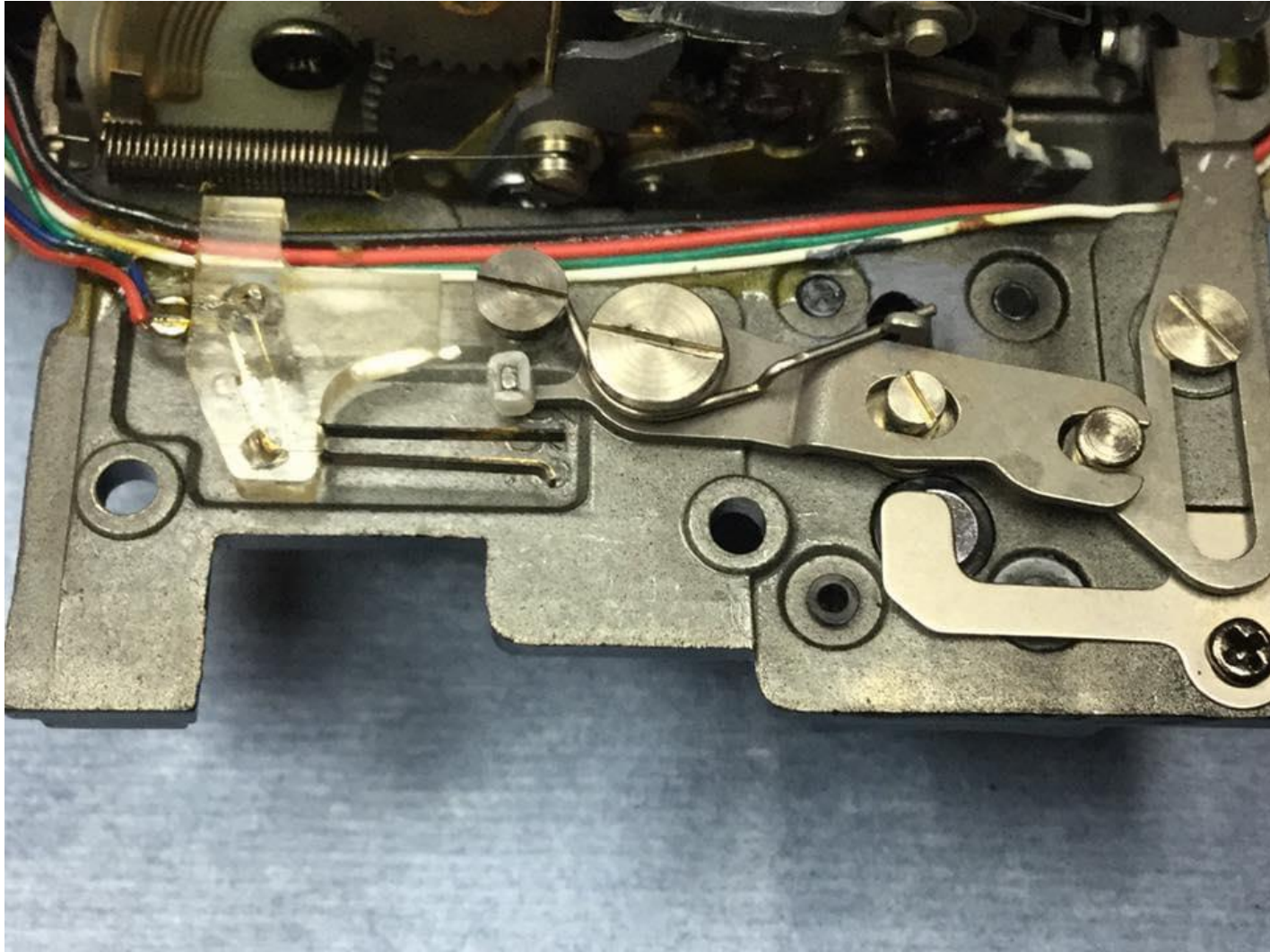
Clean the mirror AV resistor switch and circuit board, the stop down switch and magnet ... test it!





## Post #25

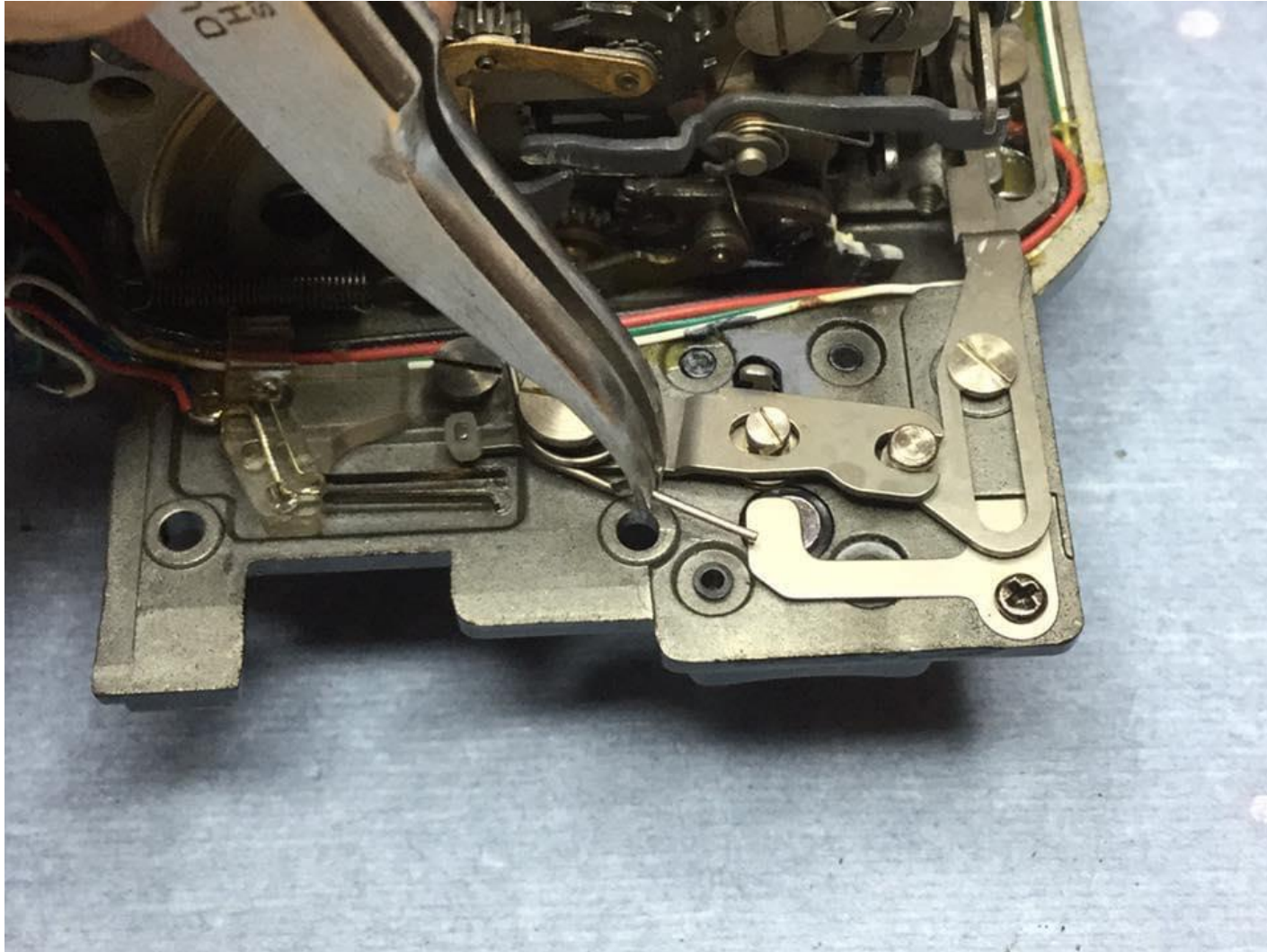
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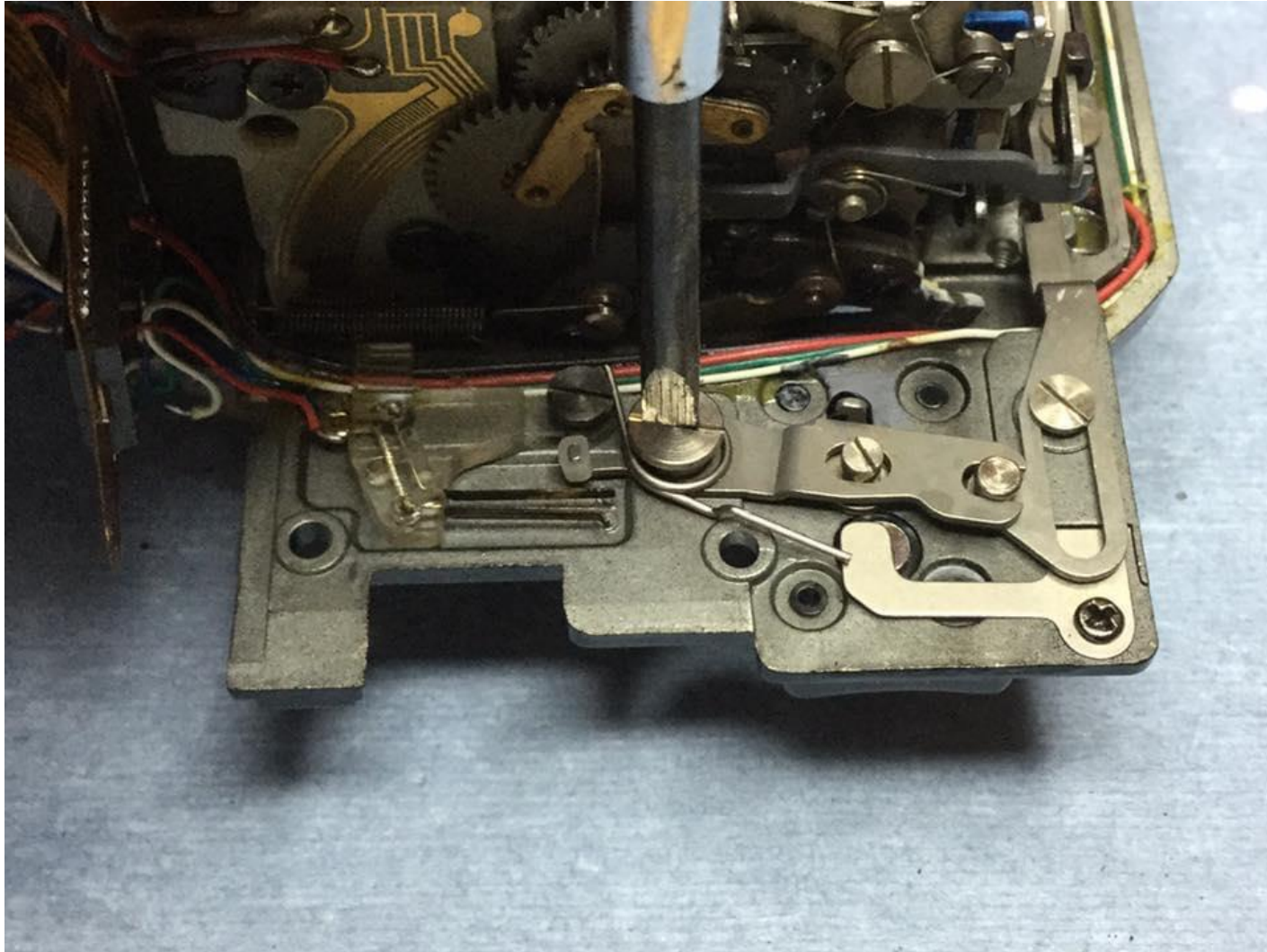
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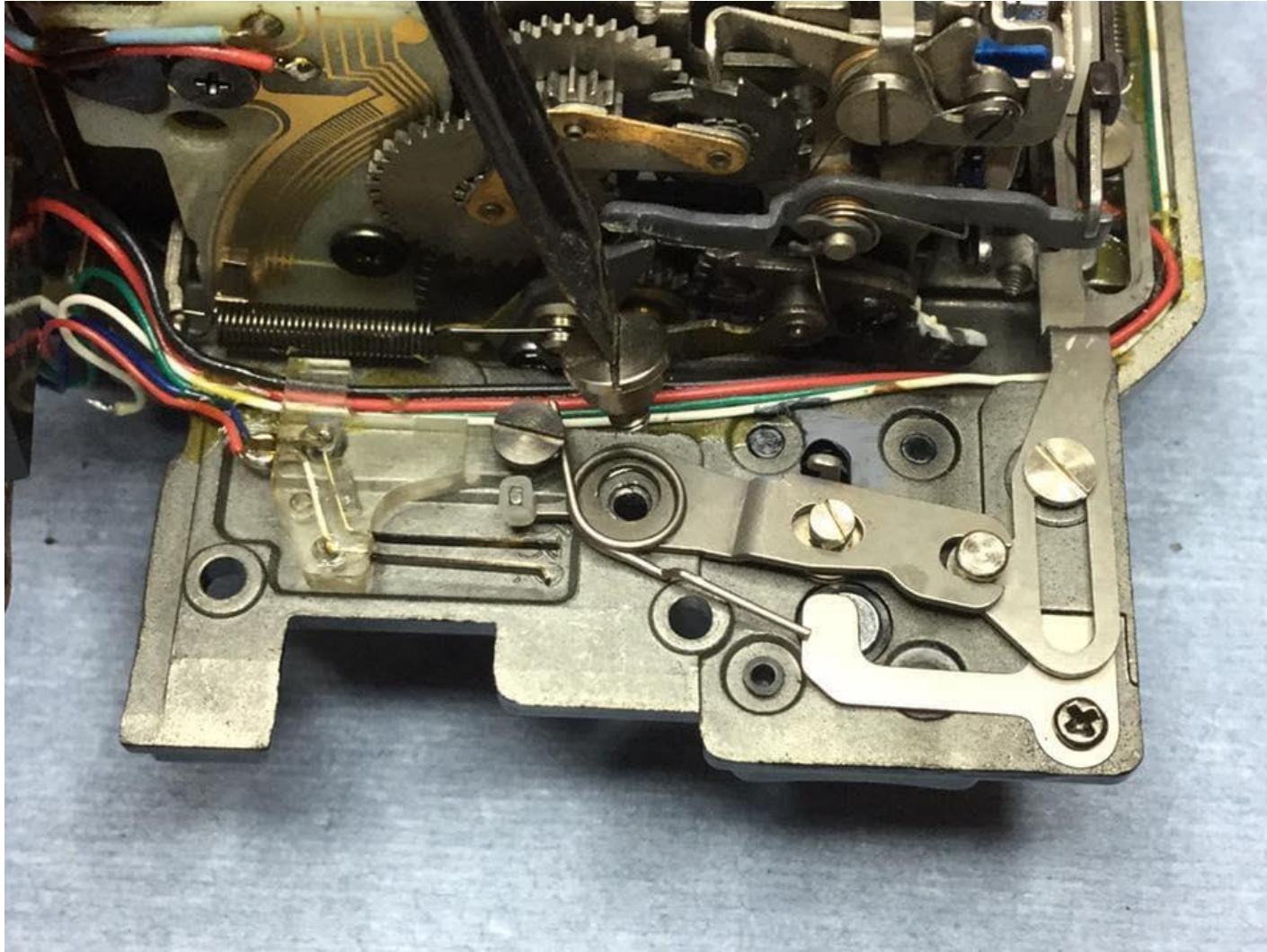
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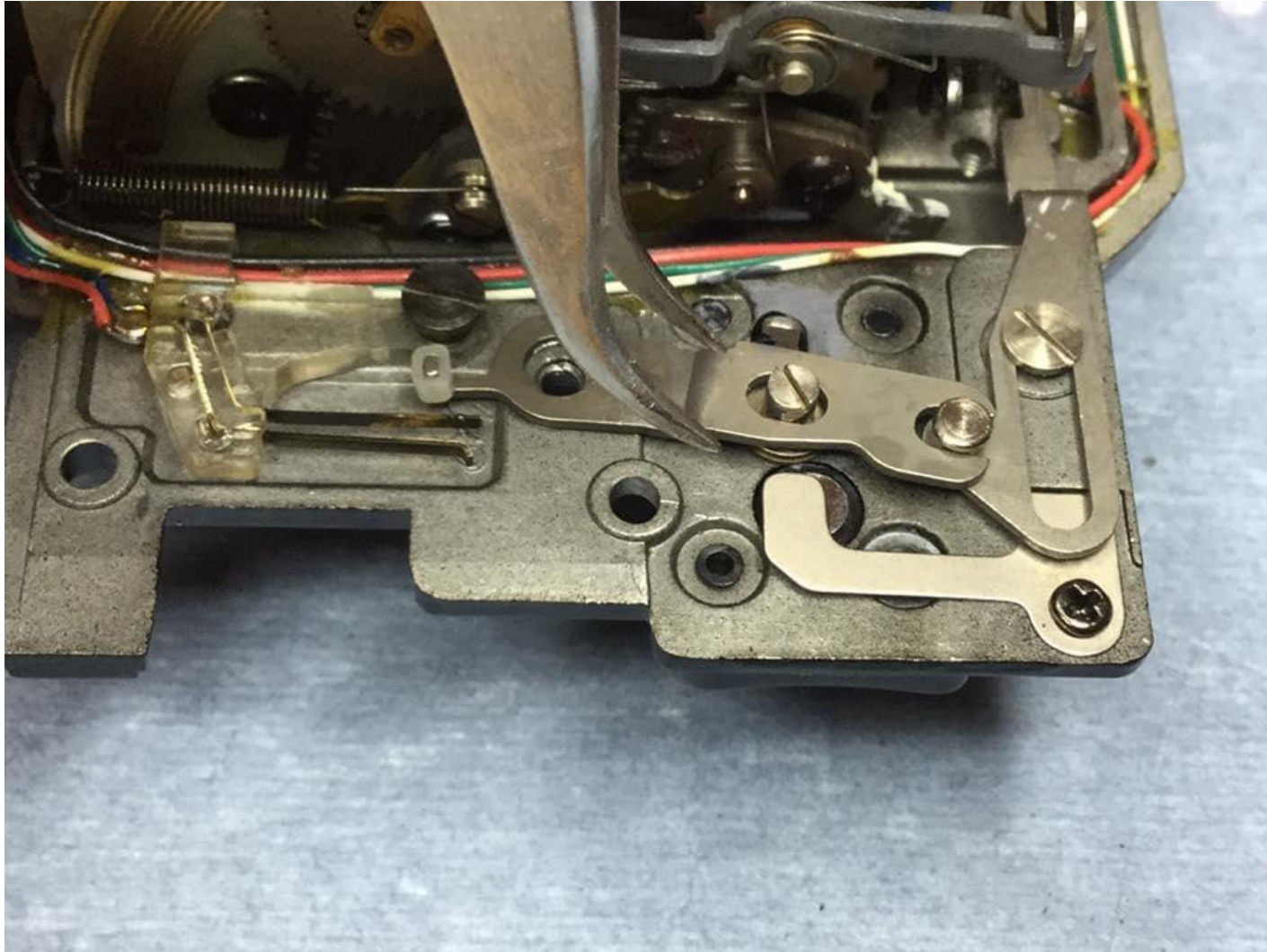
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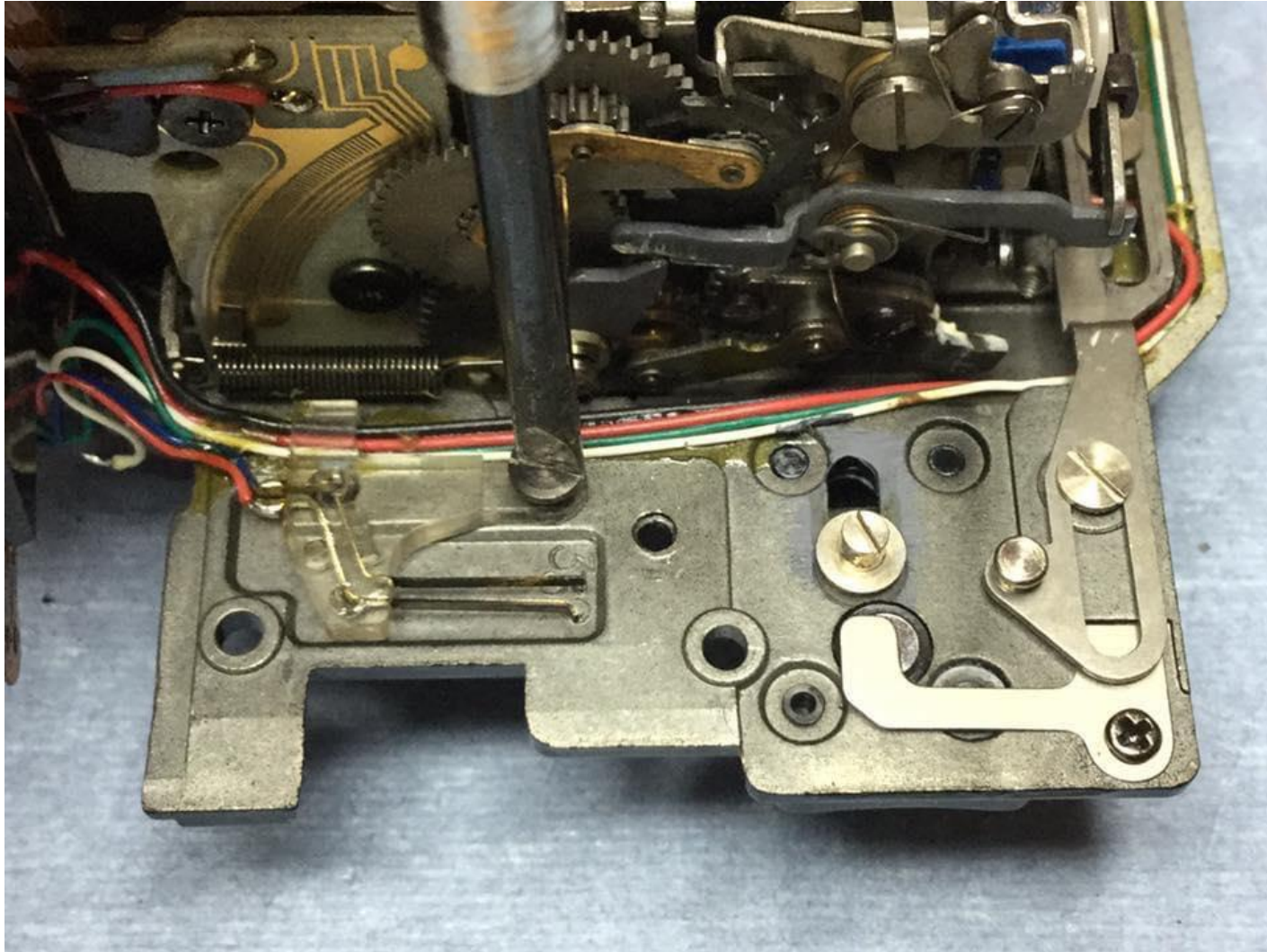
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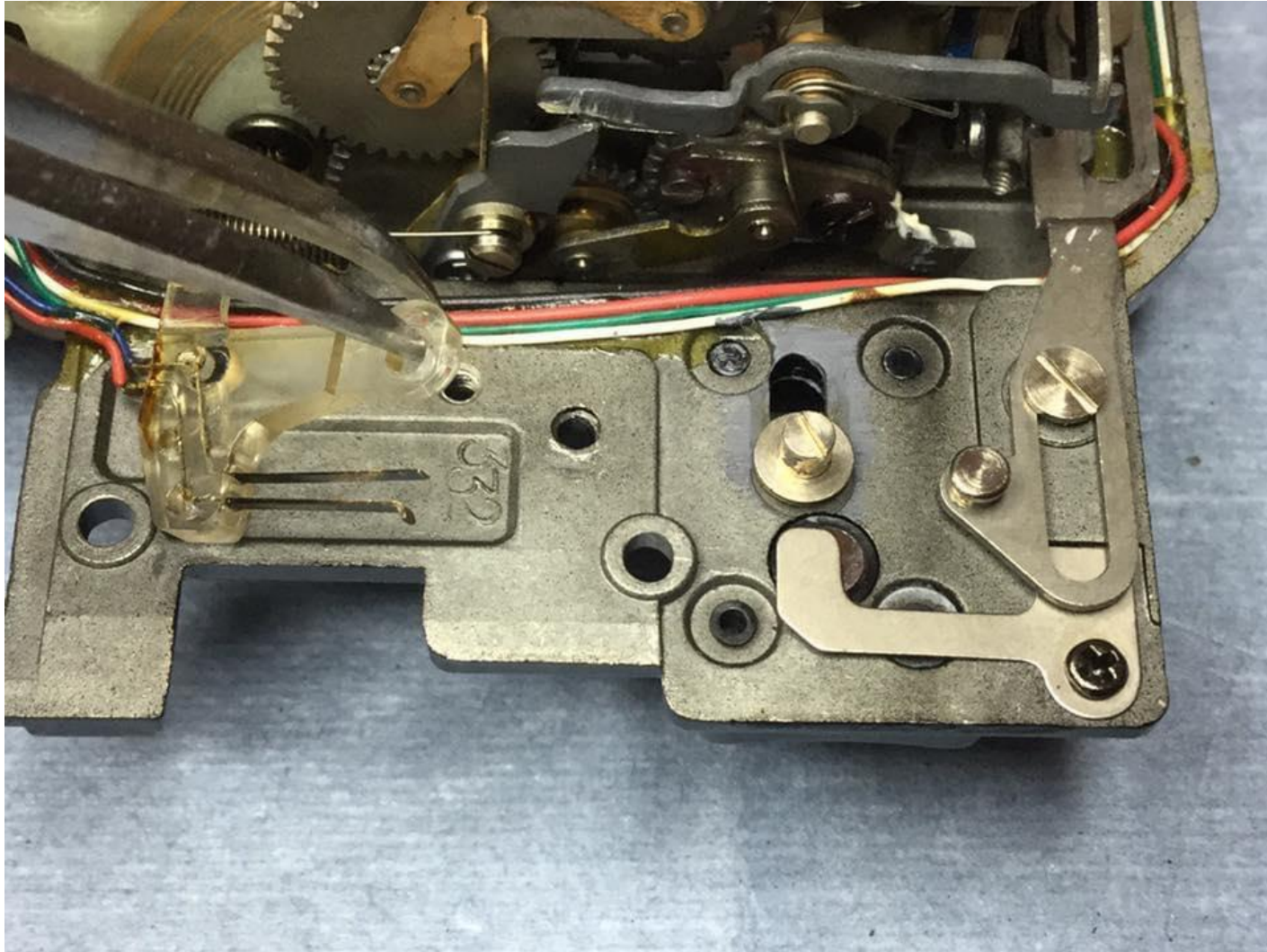
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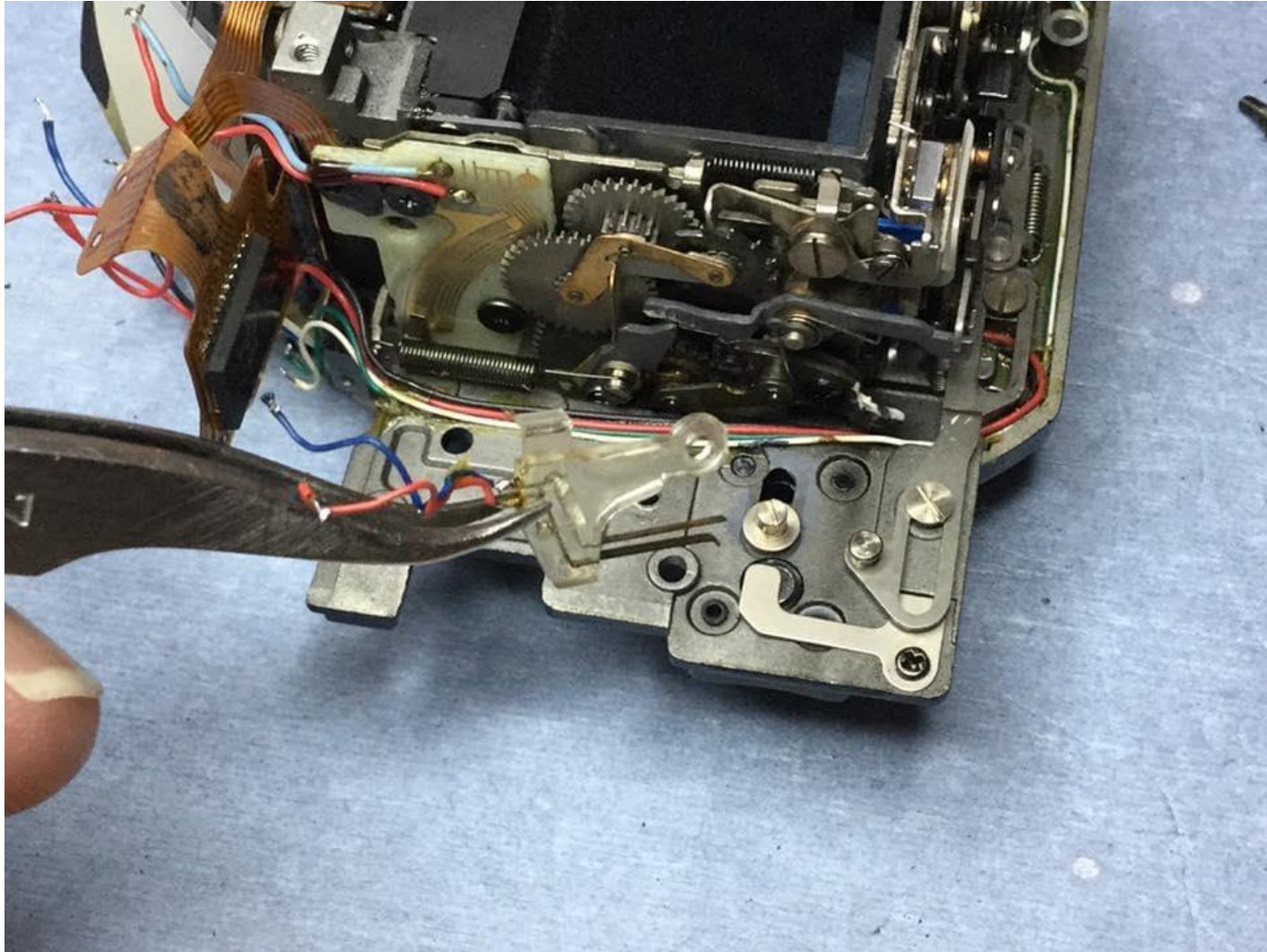
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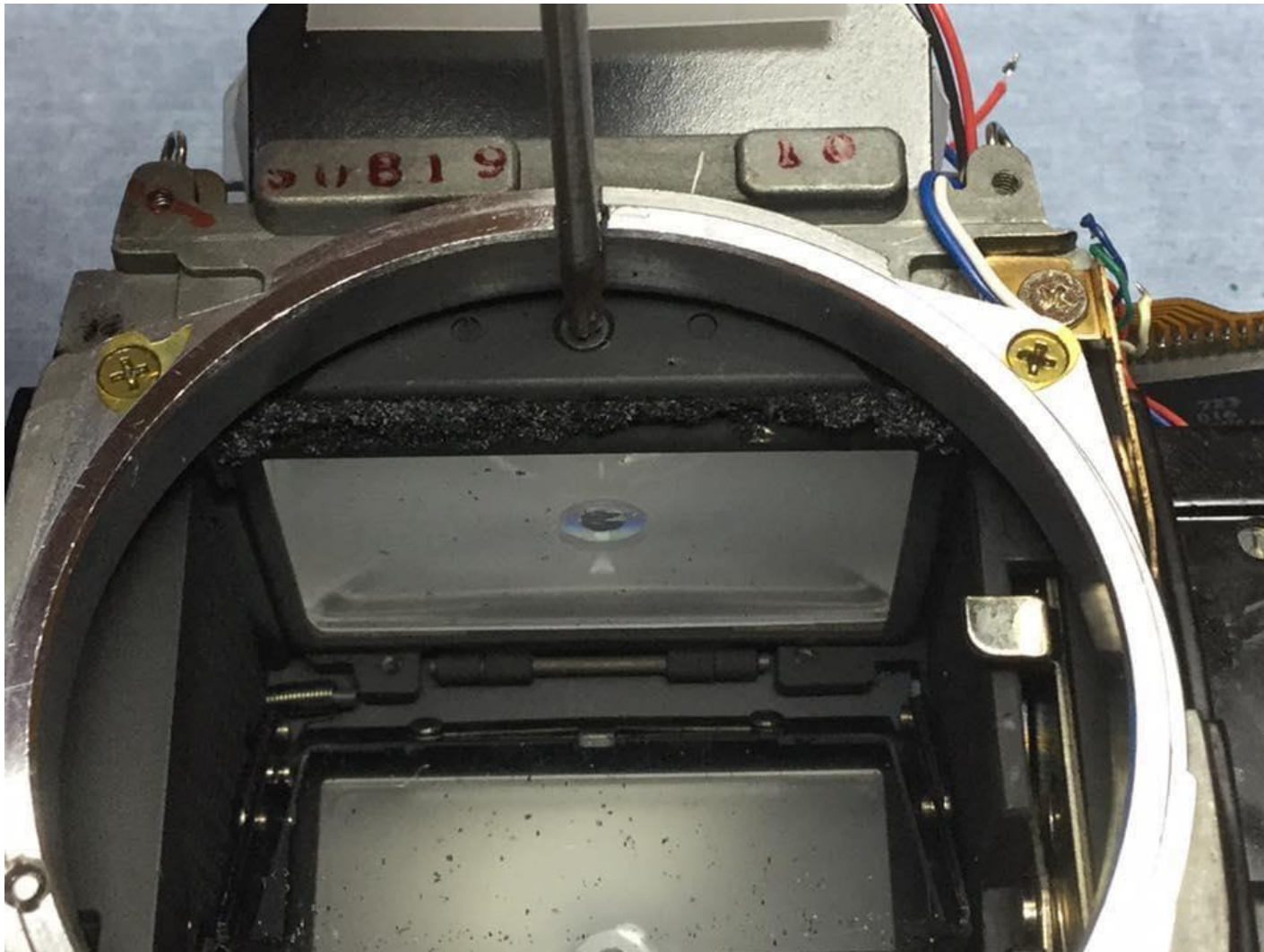




## Post #26

Remove the mirror up cushion on the fresnel screen retain plate (one screw, be careful the fresnel screen is loose and easily damaged). Replace the cushion, clean the fresnel screen and reassemble it, clean the mirror unit and reinstall it in the body (charge the mirror, release the magnet and allow the mirror to lift to the top, leave it in that position, make sure the shutter and mirror magnet in the bottom of the body are in the released position, feed the flex circuit connectors under the SV circuit, when the mirror is in position properly the lever will disengage and the mirror will drop to its rest position.

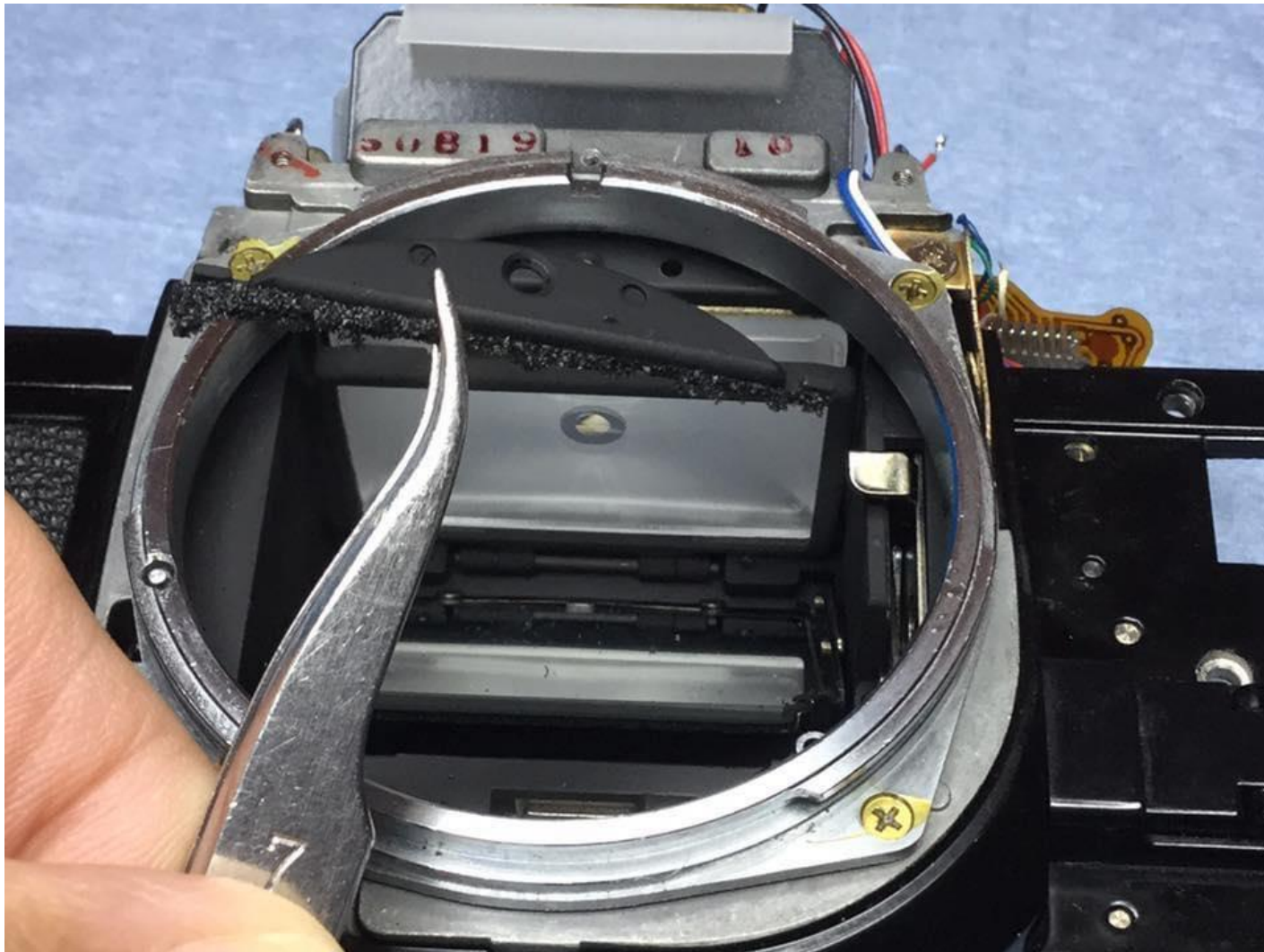
Test it mechanically by winding the shutter, releasing the bottom mirror release magnet with your finger - the shutter and mirror should release and you should be able to wind it again (refer to the notes in post #25).



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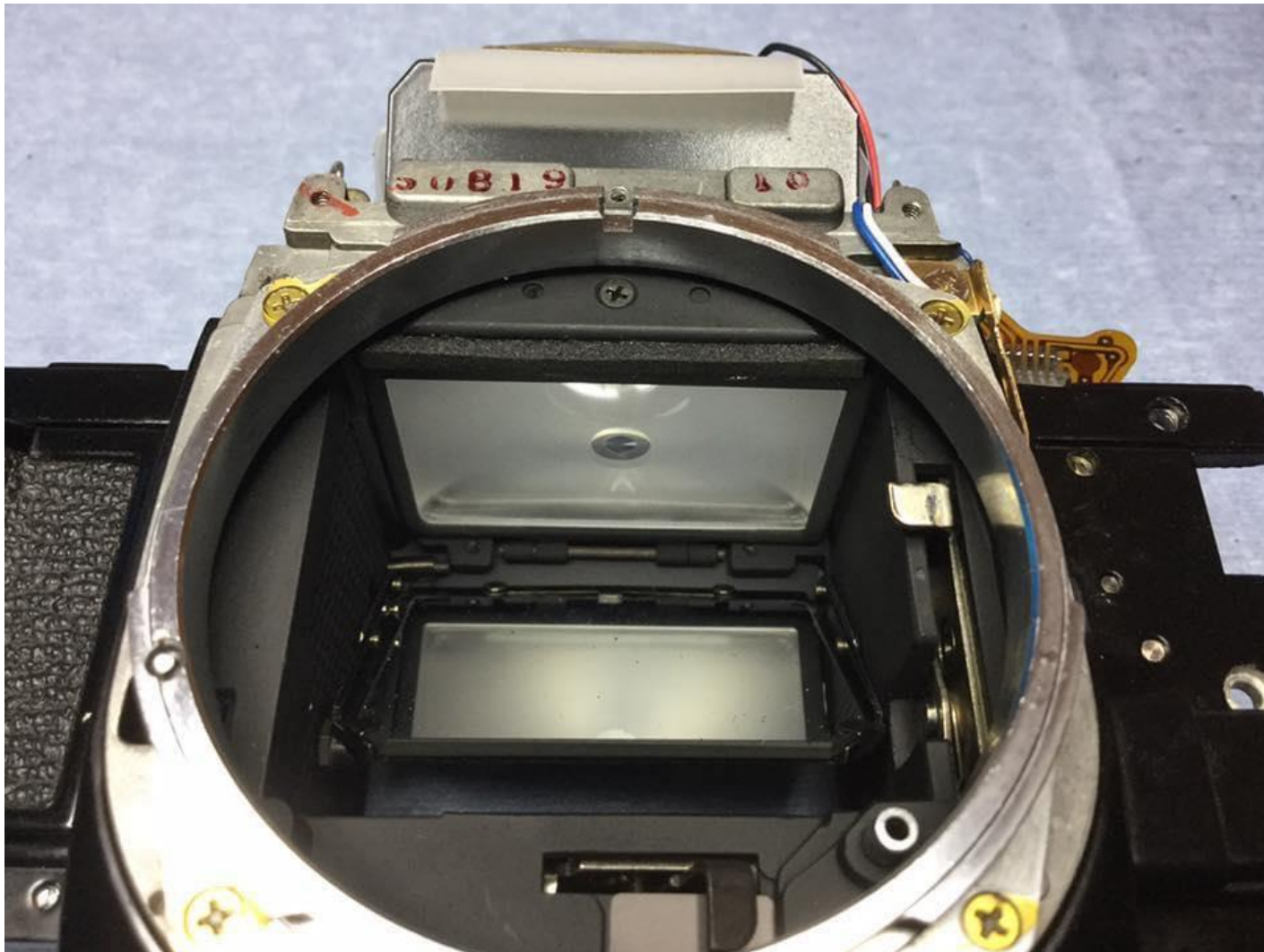
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## Post #27

Reattach the flex connectors, SV board, SV resistor brush contact, resolder the wires, reattach the rubber band that goes over the prism. Install the wind lever and release button temporarily and install the battery - test fire it, checking all functions.

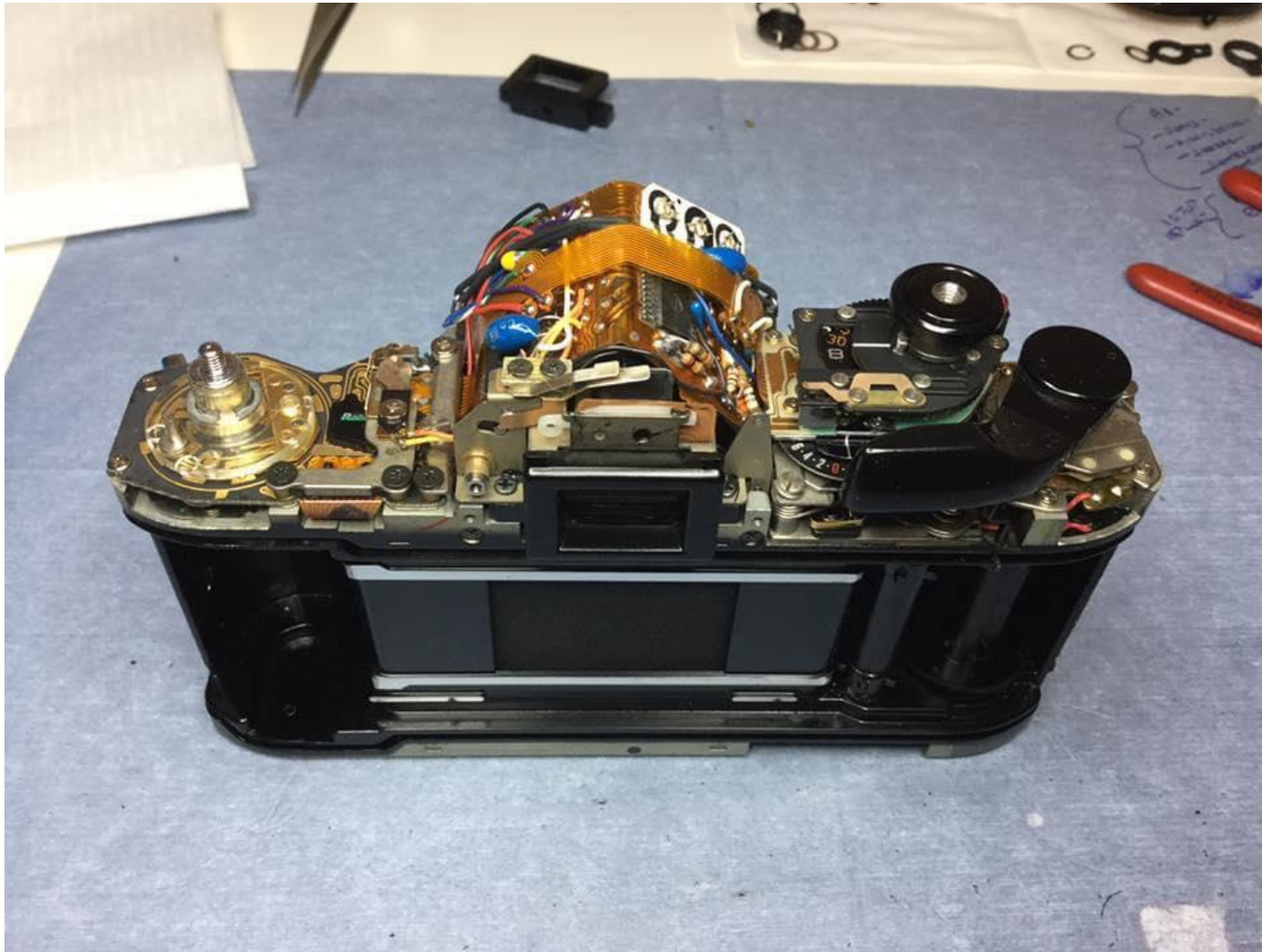
Double check the viewfinder to make sure it's clean.



## Post #27

Reattach the flex connectors, SV board, SV resistor brush contact, resolder the wires, reattach the rubber band that goes over the prism. Install the wind lever and release button temporarily and install the battery - test fire it, checking all functions.

Double check the viewfinder to make sure it's clean.

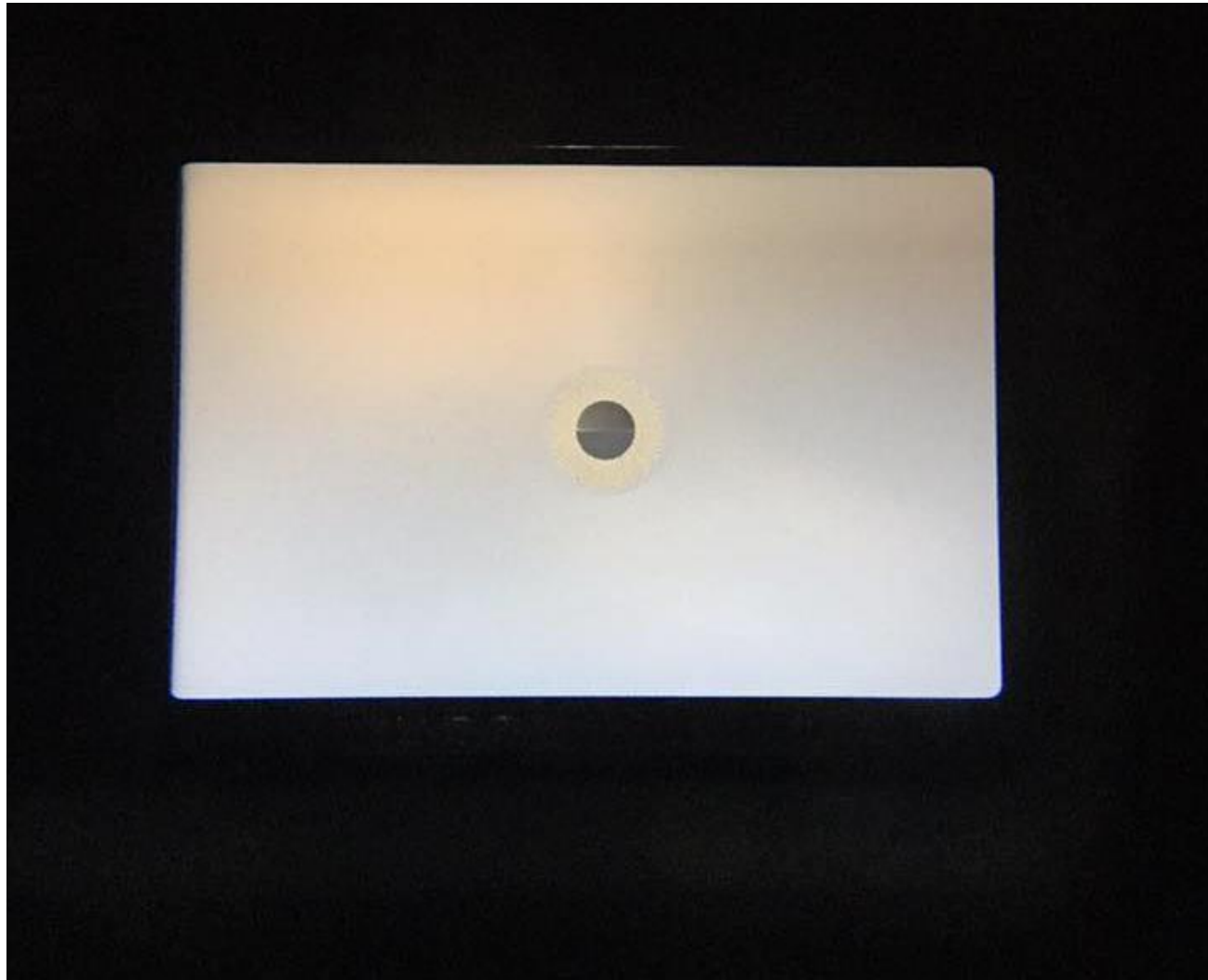




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# Post #28

Testing and adjusting the shutter speeds and auto functions - this camera is as accurate as new!

Replace the light seals, leatherette and double check everything.

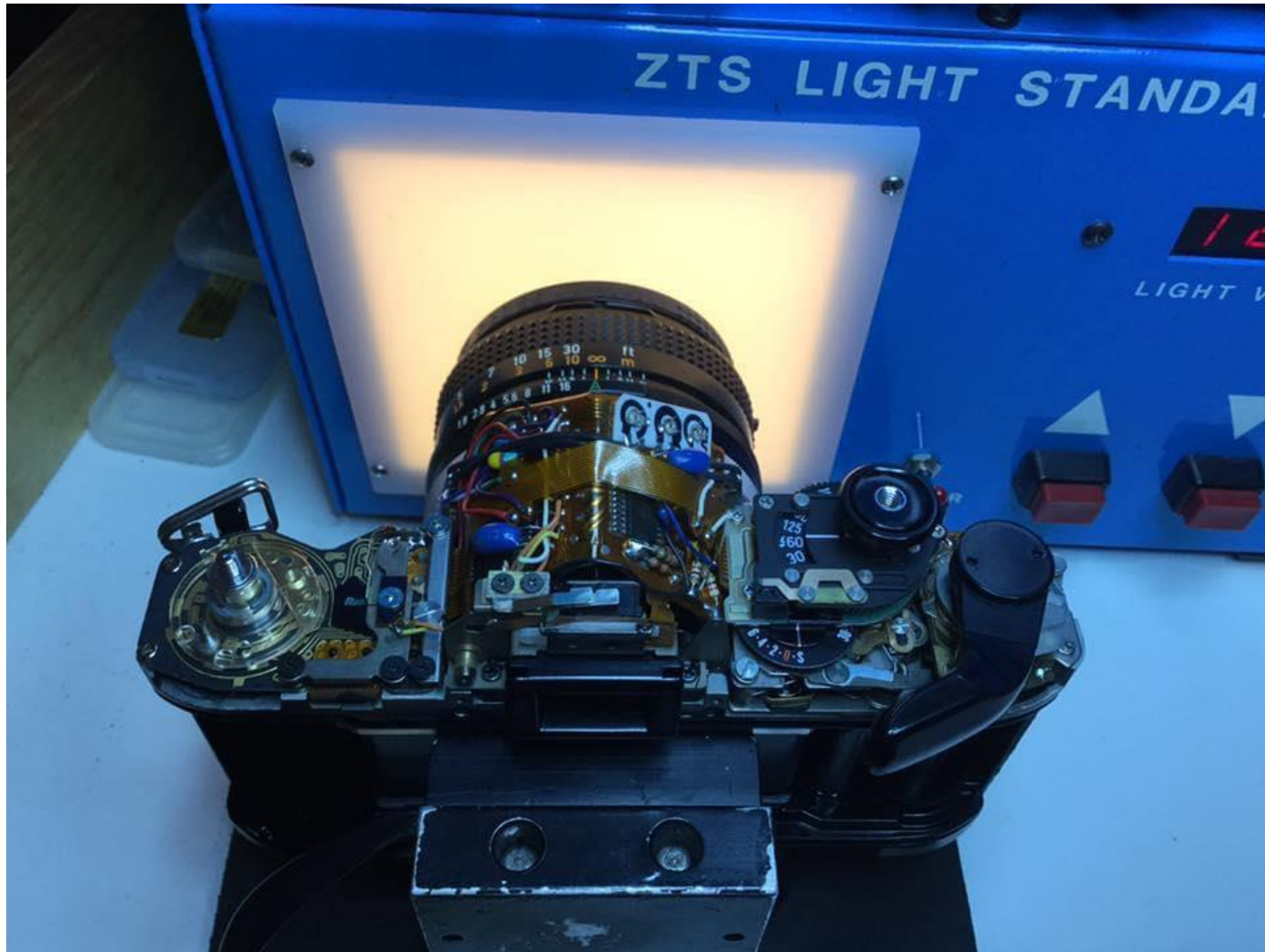




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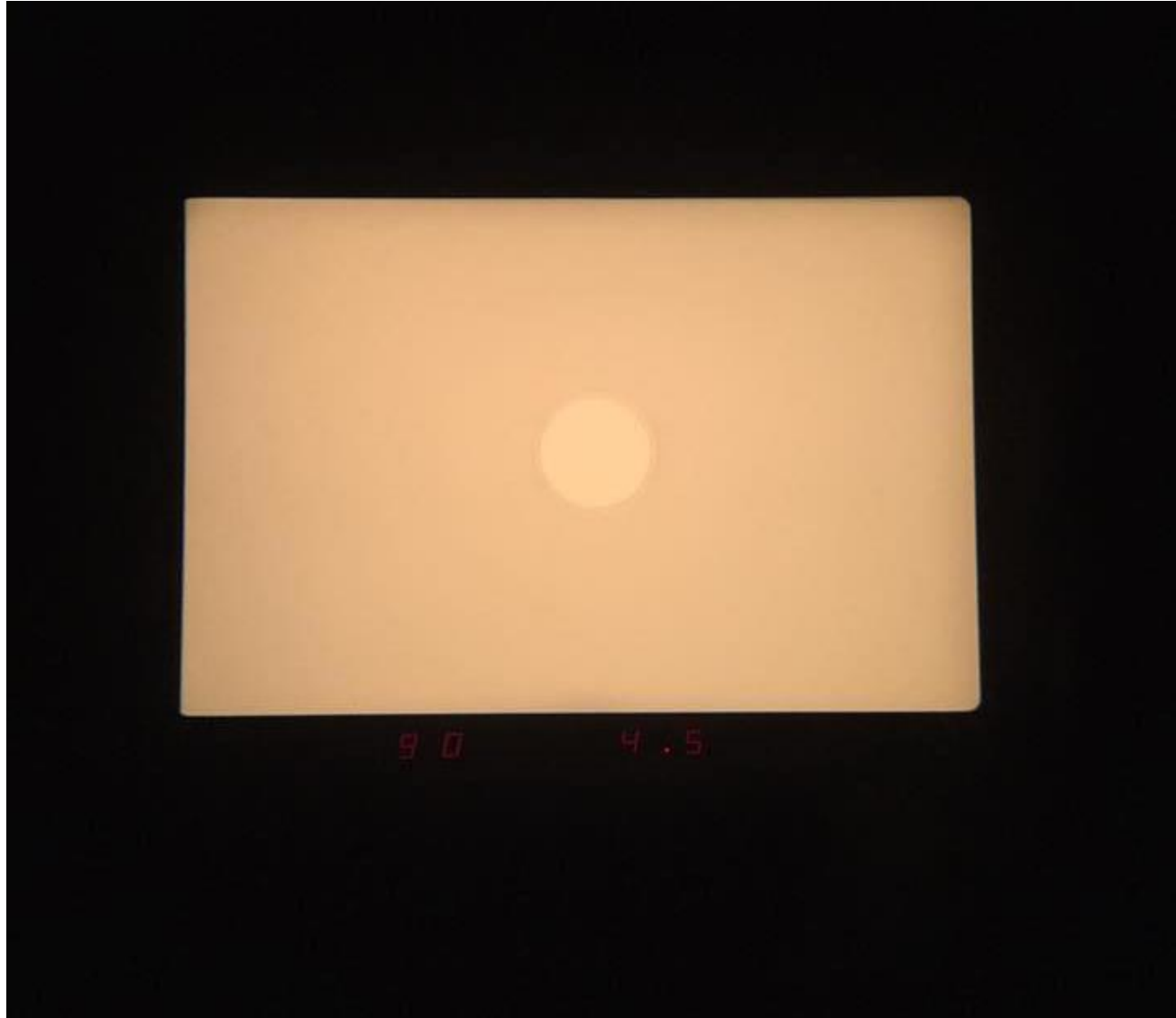
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## Post #29

WoW, this has to be as close to mint as I've ever seen in a used camera, extremely versatile and accurate - it's a good feeling when such a beautiful camera comes back to life!





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End